

**A COMPARATIVE STUDY OF THE PERCEPTIONS OF
TEACHERS ABOUT THEIR SCHOOL PRINCIPALS IN CBSE
AFFILIATED SCHOOLS OF JAMMU CITY**



A

DISSERTATION

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ABSTRACT

Much research on the perceptions of school environment in recent decades reveals that the principal's effect on the school environment is significant. This study of school environment compared teachers' perceptions of principals' interpersonal behaviour. The purpose of this study was to assess the principal-teacher interactions in CBSE schools at the primary, middle and secondary level in selected schools of Jammu city. The Principal Interaction Questionnaire (PIQ) was developed based on the Questionnaire on Teacher Interaction (QTI), which was first devised in the Netherlands to assess the eight facets of interpersonal behaviour, such as Leadership and Understanding. The Principal Interaction Questionnaire (PIQ) (Kremer-Hayon and Wubbels, 1993) was used in this study. A sample of 60 teachers including both male and female teachers was collected from 3 primary, middle and secondary schools of Jammu city. The reliability and the validity results shows that PIQ is a reliable and valid instrument for studying the principal-teacher interactions. Data analysis reveals that usually the teachers see their principal as understanding. Teachers have rated their Principals in terms of having directive behaviour, encouraging behaviour, understanding behaviour, giving independence to teachers, uncertain behaviour, disapproving behaviour, aggressive behaviour and having strict/inflexible behaviour. Results shows that there are significant gender differences between male and female teachers in their interaction with the school Principal. Significant differences have also been observed between the perceptions of various schools on all the PIQ scales. With regards to the level of appointment of teachers, it has been observed that there is a significant difference between primary, middle and secondary level teachers in their perceptions about their principal. This shows that the teachers perceive their principal interpersonal behaviour in a positive and significant manner. The results obtained from the study credibly bring out the value of the Principal-Teacher Interactions at the primary, middle and secondary levels.

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

The Principal has a very important role in the overall functioning of the school. The principal leads a group of professional, certified teachers and coordinates a cadre of classified personnel. In this position the principal establishes important relationships with the staff. As schools evolve, there is a need for different relationship paradigms to help properly guide teachers. The new leaders should empower as opposed to delegate and build trust rather than demand loyalty.

Principals can improve the overall perceptions of teachers by attending to fundamental components inherent in quality relationships. Significant interactions with the principals help teachers feel better about themselves and their collective missions, which make them more effective in the classroom. Teachers need to see Principals as supporters, facilitators and reinforces for the jointly determined the school mission rather than as directors, guiders and leaders of their own personal agenda. Then they are more likely to feel personally accountable for student learning. (Ederson, David E.; William Allan, v3 Spr 2006).

In many respects, the Principal and teacher work as a team when dealing with major discipline problems. Principals and teachers also need to work together for mutual support to deal with parental issues as well as to meet rising accountability standards and achieve adequate yearly progress.

One of most important component of relationships, which help to sustain them and add value, is trust. The development of trust factor necessary for teachers to follow and support school leader's efforts is essential. The Principals overarching trust-promotion behavior is the building and sustaining of one to one relationships with teachers through communicative and supportive behaviors. Principals need to interact personally with teachers daily to garner their trust and support (Price, Heather E, v53 n1 p116-139 2015).

The attitude of principals and teachers create an atmosphere for learning, often referred to as school climate that influences school effectiveness and shows that atmospheres of trust, shared vision, and openness create positive school climate conditions. Little is known, however, about how these climates emerge in some schools and not others. There is good theoretical reason to suspect that interpersonal relationships between principals and their teachers influence school professionals' attitudes that define the broader school climate. Theories from organizational studies, social psychology and sociology inform hypotheses about how affective, cathectic responses from interpersonal Principal-teacher relationships explain variation in school professionals' satisfaction, cohesion and commitment levels. In recent years, reflective, collaborative, inquiry-oriented approaches to supervision of teachers and teacher development have been discussed in the professional literature. However, few published studies have directly examined the teachers' perspectives on principals' everyday instructional leadership characteristics and the impact of those characteristics on teachers. It describes the everyday strategies of principals practicing exemplary instructional leadership and how these principals influenced teachers. The leadership of the principal is known to be a key factor in supporting student achievement, but how that leadership is experienced and instructionally enacted by teachers is much less clear. The purpose of this study was to examine various factors that are often present in principal-teacher interactions and teacher-teacher relationships to see how those may have an impact on teachers' classroom instructional practices. Throughout the world, educational policy makers, practitioners, and scholars have acknowledged the importance of principal leadership in the generation and implementation of innovations. The transformational leadership has emerged as a promising approach in response to increasing demands to develop and implement innovations in schools. Teachers were empowered in their work environments had higher levels of interpersonal trust in their principals. Teachers who found their work personally meaningful, and who reported significant autonomy and substantial influence in their work environments had higher levels of interpersonal trust in principals. The way a principal interacts in the school determines many of the things that we hope for from education. Principal as an instructor involves more than the simple transmission of information but includes the interaction with the teachers also that creates a positive

school environment as well. This makes imperative to study teacher's preferences for principal's behavior. In schools, teachers are in constant communication with other people in the normal course of their duties. In the classroom, communication with the students is an essential part of the learning process. Outside the classroom teachers are in communication with their heads of department, other teachers, parents and the principal.

A significant aspect of most teachers' work is the communication and relationship that they have with the principal. In some places, the principal will have direct power in appointing or dismissing teachers and in determining their working conditions. Principals may have vested in them the task of implementing government education policy. In all cases, the communication that principals have with their teachers is important in the eye of teachers. Some teachers may feel threatened by a dominant principal and will respond with a set of behavior that is defensive and cautious. Other teachers might respond aggressively to this situation. Some teachers may feel encouraged by a sympathetic principal, while others might see this encouragement as extra work pressure. In school teachers are in constant communication with other people in the normal course of their duties. In the classroom, communication with the students is an essential part of the learning process. Outside the classroom teachers are in communication with their head of department, others teachers, parents and the principal. A significant aspect of most teachers' work is the communication and relationship that they have with the principal. In some places, the principal will have direct power in appointing or dismissing teachers and in determining their working conditions. Principals may have vested in them the task of implementing government education policy. In all cases, the communication that principals have with their teachers is important in the eye of teachers. Some teachers may feel threatened by a dominant principal and will respond with a set of behavior that is defensive and cautious. Other teachers might respond aggressively to this situation. Some teachers may feel encouraged by a sympathetic principal, while others might see this encouragement as extra work pressure. This study explores the principal's behavior as perceived by the teachers.

A Principal is someone who is the leader of an entire community within a school. He/she is responsible for managing the major administrative tasks and supervising all students

and teachers. The principal is the administrative and professional leader of the school, and as such, he/she is directly responsible to the Superintendent for its successful operation. The major effect of the principal is in the field of educational leadership and supervision, with stress on the improvement of teaching and learning. A large part of any school Principals job is to handle student discipline. The first step of having effective student discipline is to make sure that your teachers know what you are expecting when it comes to student discipline. Once they understand how you want them to handle it, then your job becomes easier. A good principal will listen to all sides of an issue without jumping to conclusions collecting as much evidence as you can. A Principal should be positive, enthusiastic, have their hand in the day today activities of the school, and listen to what their constituent is saying. An effective leader is available to teachers, staff members, parents, students and community members. Good leaders stay calm in difficult situations, thinks before they act, and puts the needs of the school before themselves. Developing, implementing and evaluating the programs within your school is another larger part of a school Principals role.

A Principal should always be looking for ways to improve the student experience at school. Developing effective programs that cover a variety of areas is one way to ensure this. It is acceptable to look at other schools in your area and to implement those programs within your own school that have proved to be effective elsewhere. Programs within your school should be evaluated every year and weekend as necessary. If your reading program has become stale and your students are not showing much growth, then it may be necessary to review the program and make some changes to improve the quality of that program. The Principal of a school is like the center of a wheel. The Principal keeps everything in line and in good working order.

Historically, principals traditionally have been responsible for managing a well-run school. Managing staff, developing rules and procedures, and attending to the general operation of a building have always been part of the job. However, the conception of school management began to shift in the late 1970's. Highly influential school effectiveness studies asserted that effective schools are characterized by an climate or culture oriented toward learning, as expressed in high achievement standards and

expectations of students, an emphasis on basic skills, a high level of involvement in decision making and professionalism among teachers, cohesiveness, clear policies on matters such as homework and student behaviors, and so on. All this implied changes in the principal's role.

1.2 PRINCIPAL-TEACHER RELATIONSHIP

In Indian schools, Principals play a significant role and are responsible for the operation of the school. In very small schools, the person may teach part-time as well. In large schools, there may be one or more assistant Principals. The administrative hierarchy may consist also of a number of department chairpersons, school counselors, a social worker, school psychologist, diagnostician, and so on. Although functions vary by location and size, the Principal is primarily responsible for administering all aspects of schools' operations. What then do Principals actually do on a day-to-day basis? One way to analyze what Principals do is to examine their job from a number of perspectives: (a) leadership functions, (b) administrative roles, (c) management skills, (d) task dimensions, (e) human resource activities and (f) behavioral profiles of effective versus successful administrators. Every Principal's goal is to ensure high performance of teachers and students in achieving the school's mission. In Indian School's Principal is higher authority and then he/she is followed by the teachers. Teachers follow the orders, directions and guidelines of the Principals. Teachers perceive their Principals as the head or chief which guides them how to teach effectively so that they can participate in the smooth functioning of the school. Principals spend a large portion of their time interacting with others, the majority of which is in face to face communication. Principals spend considerable time interacting with teachers.

In order to establish a successful principal and teacher relationship it is important to begin with the end in mind. The start of a successful Principal and teacher relationship begins with one's expectations. Great relationships are founded on good communication and trust. When there is a positive relationship both the principal and teacher have major enthusiasm regarding student's success. Today is an important day in the history of the principal and teacher relationship. Schools have been an easy target for budget starved

governments. It's time to be proactive in working together toward innovative leadership and instruction. The principals and teachers who were committed to a school for two or three years are changed with no warning. Many principals and teachers must change in order to receive the same level of success that they experienced in past schools. Starting in a new environment can be positive when the new principals and teachers work together. One key priority for the principal is establishing a sense of confidence in the schools' staff. Each principal serves as a role model for teachers who aspires to become principals. Good relationships are established when there is ongoing concern for the resources that will help teachers to be successful. The principal should find ways to interact with teachers throughout a week. It may be convenient to work until the next meeting but addressing issues as they arise will make staff meetings less cumbersome. The principal must have the same heart for the children as the teachers. A principal who teaches a class during the year has a better awareness of the students' needs. This principal can collaborate with teachers who are providing similar interactions. It's important to have goals and objectives for the entire school. The principal and teachers should come together to create goals and share ideas. Everyone in the school should be aware of the goals and objectives. There should be some visible ways in which everyone knows that the school is making progress towards these goals. During regular staff meetings the goals can be part of the ongoing discussion (Jones, 2011).

The relationship between a teacher and Principal can be polarizing at times. A principal by nature has to be different things at different times for different situations. They can be supportive, demanding, encouraging, reprimanding, elusive, omnipresent and a wide array of other things depend on what a teacher needs to maximize their potential. Teacher must understand that the principal will fill whatever role they need to help a teacher grow and improve. A teacher must also recognize the value in building a trusting relationship with their principal. Trust is a two Way Street that is earned over time through merit based on actions. Teachers must make a concerted effort to earn their principals trust. After all, there is only one of them, but a building full of teachers vying for the same (Meador, 2017).

In the present study, the Principal-Teacher relationship is being studied keeping in view the concept of teacher-interpersonal behavior as discussed in the next section.

1.3 LEARYS' MODEL FOR INTERPERSONAL BEHAVIOUR

Extensive research of interpersonal behavior was undertaken by Leary, working in the clinical psychology field and reported in his text, *Interpersonal Diagnosis of Personality* (1957). Leary described interpersonal behavior as that which is related overtly, consciously, ethically or symbolically to another human being (real, collective or imagined). Much of Leary's work was based on observations made of psychiatric patients' interpersonal relationships with their psychologists or psychiatrists and also their relationships with other patients-especially those in the group therapy situation. Leary believed that personality theories should hold for adjusted and maladjusted behaviors.

Leary saw interpersonal behavior as the most important dimension of personality from the standpoint of human survival. He believed that much of this stemmed from man's long and helpless infancy which builds up a dependency on other human beings. He believed that the way they communicate with other humans is indicative of their personality.

He concluded that a person's interpersonal behavior could be described in two main ways. The first is that it can be measured on a continuum that has dominant behavior at one end and submissive behavior at the other. Secondly, a person's interpersonal behavior could be measured on another continuum which has cooperative behavior at one end and oppositional behavior at the other. Leary proposed a two dimensional model that had the dominant/submissive continuum as the vertical axis and the cooperative/oppositional continuum as the horizontal axis. By combining the continua in this way it became possible to consider combinations of these behaviors into eight sectors e.g. DC – dominant/cooperative or CS – cooperative/submissive. A person's interpersonal behavior could then be mapped on the model. The ultimate goal of teaching is to assist students to become independent and self-regulated learners. During this

process the teacher has to undertake many different jobs with main focus being on communication with students. Thus teaching and learning can be considered as a communication process. The interpersonal behavior of the students and teachers depend on the effectiveness of this communication process. By interpreting the class as a communication system, a number of characteristics of the teacher-student communication can be considered. Arends (1998) believes that an open and honest communication process is a single most important variable for promoting positive classroom environment.

In clinical and psychological research settings, Leary (1957) and his co-workers analyzed hundreds of dialogues between patients and their therapists which included discussions in order to classify the different types of behavior exhibited. These dialogues and discussions were divided into short statements representing different kinds of interpersonal behavior. The statements were coded and arranged into 16 dimensions with two levels of behavior. The level one behavior was classified in terms of interpersonal mechanisms, gestures or reflexes and involved two-way interpersonal codes. The Level two behaviors are classified in terms of interpersonal attributes.

Leary believed that the way humans communicate is indicative of their personality. Along with other psychologists, he felt that the most important forces driving human behavior are the reduction of fear and the corresponding maintenance of self-esteem. Therefore, when people communicate, they consciously or unconsciously choose behaviors which avoid anxiety and allow them to feel good about themselves. These may differ each person and depend upon the personality of the communicating partner. One individual might choose an authoritarian style, whereas another prefers dependency to achieve the same end (Wubbels, Creton, Levy, & Hooymayers, 1993).

Leary then developed a model which describes and measures specific interpersonal behavior. The model places personality at the heart of the interpersonal behavior. The model allows for a graphic representation of all human interaction. Using the model, it is possible to record the behavior and interaction during a dialogue between one person and another. Both normal and abnormal behavior can be represented on the same scale which

can not only be used as a diagnostic tool in psychotherapy but also in management settings.

The 16 dimensions suggested by Leary and his colleagues were later reduced to eight categories of interpersonal behavior (Wubbels, Creton, Levy, & Hooymayers, 1993). This two dimensional coordinate system of representing interpersonal behavior mapped the degree of cooperation between the individual's communication on the horizontal axis and the degree of control or influence over the communication process of the communicator being observed on the vertical axis as depicted in figure 1.1. Leary originally labeled the Cooperation-Opposition Axis the "Affection-Hostility" continuum (Wubbels, Creton, Levy & Hooymayers, 1993).

Although Leary's model was an adequate model to represent interaction behavior and withstood testing in psychological research settings, the 96-item interpersonal adjective checklist (IAC) that Leary used together his data about four levels of behavior intensity was cumbersome in an education setting, (Wubbels, Creton, Levy & Hooymayers, 1993) and contained many items which were not pertinent to teachers.

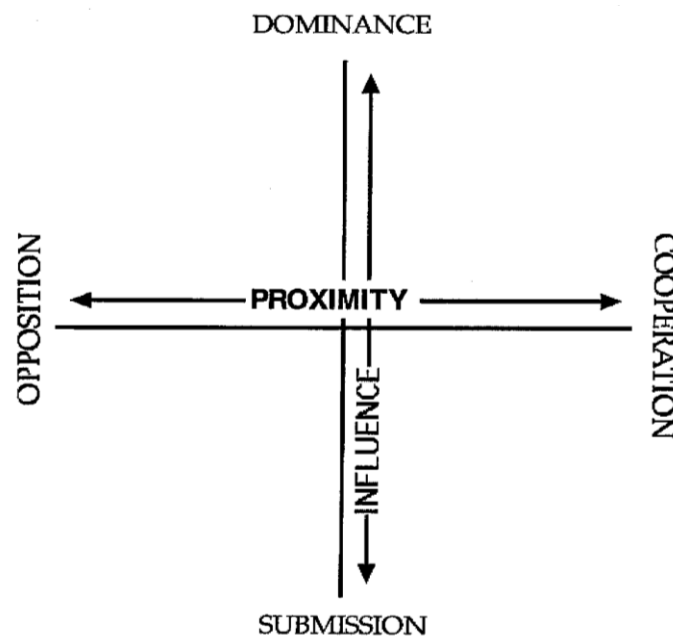


Figure 1.1. The two-dimensional coordinate system of the Leary Model.
(Source: Wubbels, Creton, Levy & Hooymayers, 1993, p.15).

This two-dimensional model based on the work of Leary (Wubbels, Creton, Levy, &Hooymayers, 1985) has been used widely in educational settings (Wubbels, Creton, Levy, &Hooymayers, 1993). Also the cross-national validation of the Leary model has shown it to be culturally universal (Lonner, 1980; Wubbels& Levy, 1991).

1.3.1 The Development of the Model for Interpersonal Teacher Behavior

The two dimensional coordinate system of Leary's model has two consecutive behaviors prevailing upon each other in the same quadrant. For example, dominance and cooperation DC as well as cooperation and dominance CD can be seen in the same quadrant (Figure 1.2). This represents the teacher in the classroom. The difficulty with this two-dimensional model was of exhibiting two conflicting behaviors in the same quadrant, such as when opposition and submission are plotted in the same quadrant. This limitation might have led to the modification of the two-dimensional model given by Leary into a more comprehensive one.

The model for interpersonal teacher behavior (Wubbels & Levy, 1993) has been adapted from Leary's model. In this model teacher behavior is mapped with the proximity dimension (Cooperation, C – Opposition, O) and the influence dimension (Dominance, D – Submission, S) to form eight sectors, each describing different behavior aspects. The sections in the model for interpersonal teacher behavior are labeled DC, CD, CS, SC, SO, OS, OD, DO according to their position in the coordinate system. For example, the two sectors DC and CD are both characterized by Dominance and Cooperation. In the DC sector, the Dominance aspect predominates over the Cooperation aspect, whereas in the adjacent sector CD, Cooperation predominates over the Dominance aspect.

These modified behavioral aspects were labeled Directive, Encouraging, Understanding, Giving Independence, Uncertain, Disapproving, Aggressive and Strict Behavior.

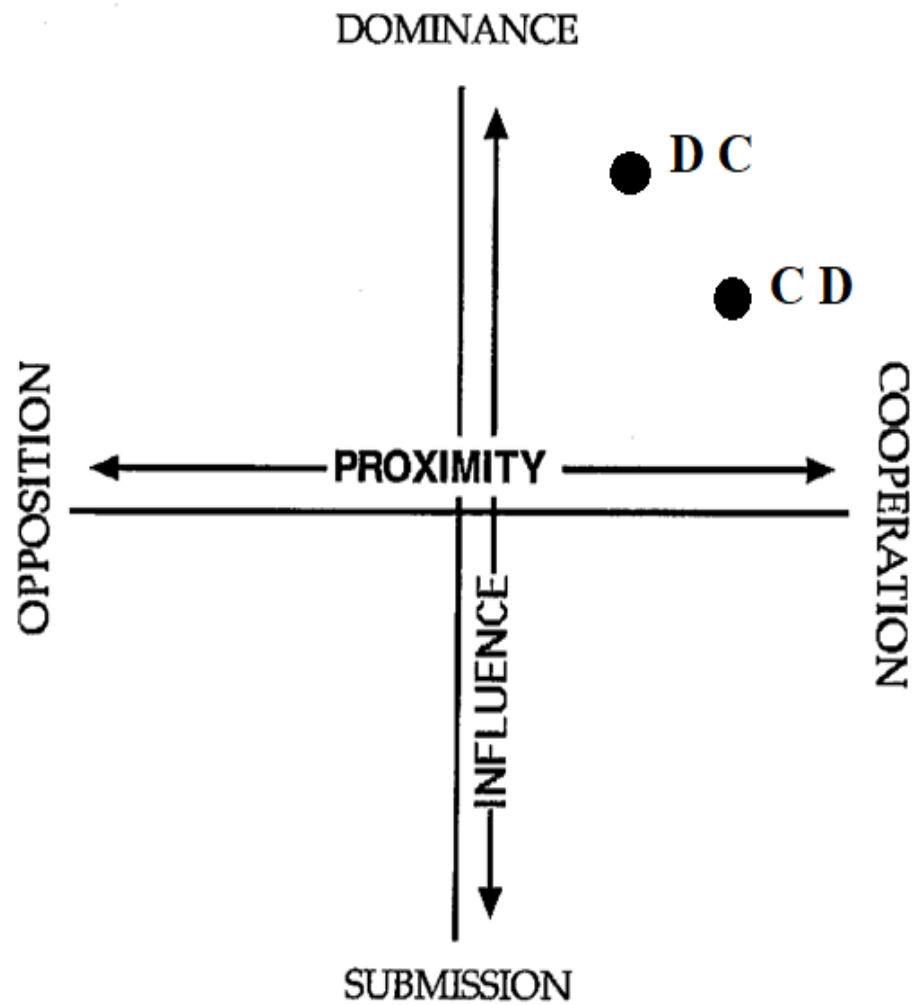


Figure 1.2. DC and CD placements in Leary Model

(Source: Wubbels, Creton, Levy & Hooymayers, 1993)

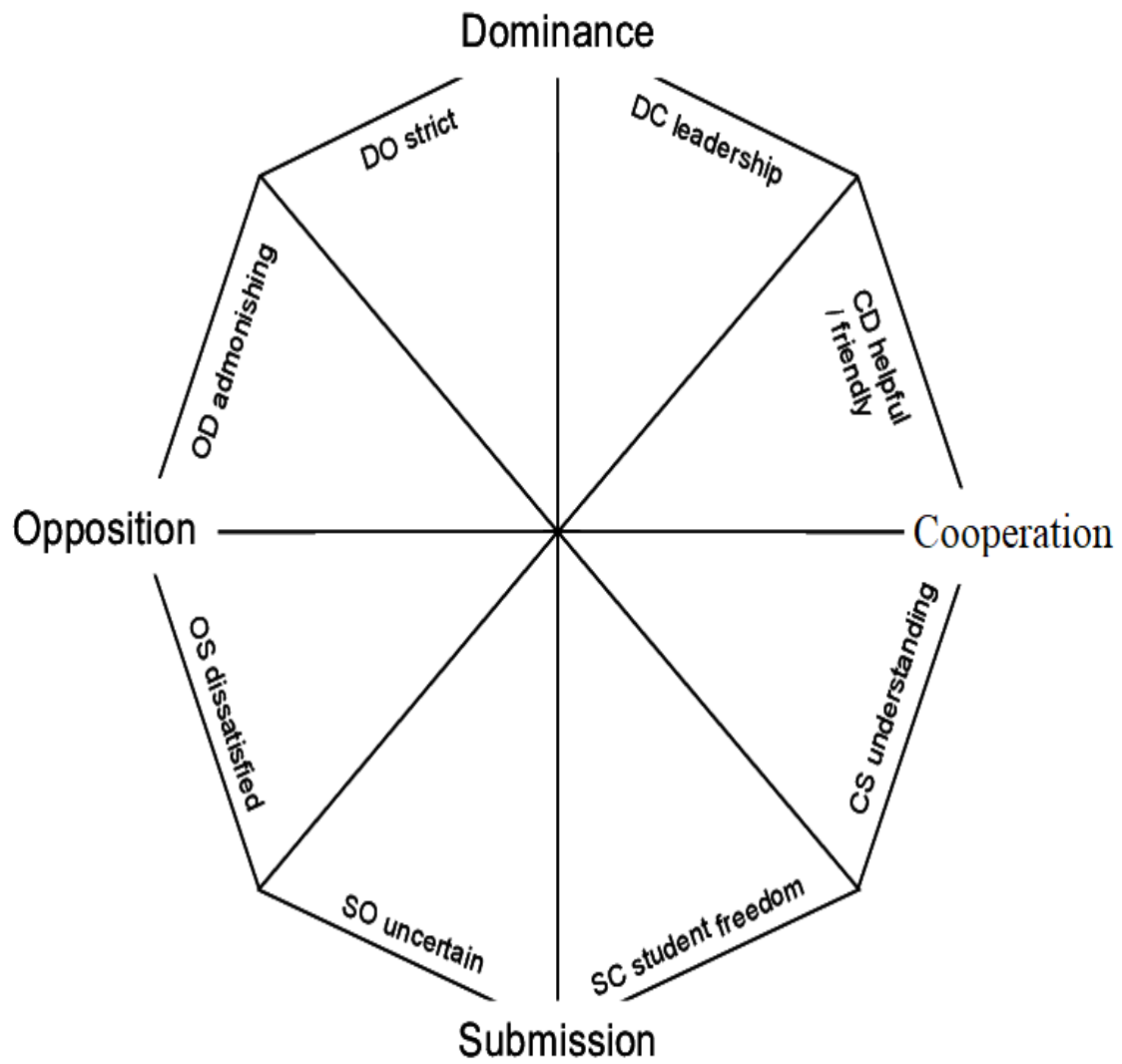


Figure 1.3. The Model for Interpersonal Teacher Behavior.

(Source: Fisher, Fraser &Wubbels, 1993)

1.4 OBJECTIVES OF THE STUDY

The specific objectives of the research study are:

1. To study the interpersonal behavior of principals in selected CBSE schools of Jammu city.
2. To investigate the gender differences in teacher's perceptions about their principal.
3. To compare the teacher's perceptions about their principal in different CBSE schools of Jammu.
4. To compare the teacher's perceptions about their principal based on their level of appointment.

1.5 SIGNIFICANCE OF THE STUDY

There is no such study conducted in Jammu city which helps in assessing the interpersonal behavior of CBSE School principal. That's why I am going to study such a study. So the present study is significant because it will focus on the principal-teacher interpersonal behavior at primary, middle and secondary level. It is also significant as teacher's perceptions about their ideal principal would be ascertained. The findings of the present study could be applied for improving the principal-teacher interpersonal behavior as it would present clues through teacher's perceptions as to what kind of behavior teachers like their principal to exhibit in the school which may lead to the development of the positive school environment. The study of principal-teacher interaction is very important since it has a major impact on overall organizational performance and effects the motivation of all actors in the school system. This study is expected to through light on the different interpersonal aspects of the behavior of principals of CBSE schools of Jammu city. The well informative results gathered from the study may be of great assistance to the principals in identifying the factors that contribute towards creating effective style that will boost their management skills and would be quite helpful to

improve the overall administrations in schools. This study is significant because it is one of the few studies in the field of principal interpersonal behavior in India. It is also significant because it helps the principals to evaluate themselves through their teacher's perceptions.

1.6 DELIMITATIONS OF THE STUDY

This research was mainly concerned with assessing the behavior of CBSE school principals and the principal-teacher interactions in such CBSE schools. Since this study required teachers of different levels to observe principal's behavior the study was limited to only primary, middle and secondary CBSE schools of Jammu city. Also this study was confined to only 60 teachers of CBSE schools for collecting data and assessing the interpersonal behavior of CBSE school principals. This study was limited to those CBSE schools and teachers from the randomly selected sample who participated.

A limited time was available for collecting data from CBSE schools else the study could have been done on a large scale. Due to paucity of time, the present study is only quantitative in nature; whereas using qualitative analysis could have enhanced the results.

1.7 OVERVIEW OF THE DISSERTATION

The present dissertation consists of five chapters that cover all essential aspects necessary for the present research study. Chapter 1 provides information regarding the background of the study, interpersonal behavior, and researcher objectives of the study, significance of the study and the delimitations of the study.

Chapter 2 familiarizes the readers with review of literature related to the study. In this chapter, research studies using the Questionnaire on Teacher Interaction, Principal Interaction Questionnaire and Principal Teacher Relationship are discussed.

Chapter 3 contains the details regarding the research methodology used in this study. This includes the research aims and objectives, the design of the study i.e., sample for the study and selection of the research instruments, the collection and the analysis of the data.

The quantitative and the qualitative methods of data collection and the analysis have also been discussed in this chapter.

Chapter 4 presents the result of the study. Details of validation data for PIQ are presented in this chapter. Lastly, the major findings regarding the research objectives of the study are reported in chapter 5. This chapter also provides information on the implications, limitations and conclusions of the study. Future directions for research based upon the findings of the study are also suggested.

The dissertation ends with the references along with the summary of the research and appendix consisting of the questionnaires as used in the study.

CHAPTER 2

REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

A review of related literature is the process of collecting, selecting and reading book, journals, reports, abstracts and other reference materials (Reosura, 2010). The review of the related literature is an important part of the scientific approach and is carried out in all areas of scientific research, whether in the physical, natural or social sciences. Such reviews are also the basis of most research in the field of education. Research takes advantage of the knowledge which has accumulated in the past as a result of constant human endeavor. It can never be undertaken in isolation of the work that has already been done on the problems which are directly or indirectly related to a study proposed by a researcher. A careful review of the research journals, books, dissertations, thesis and other sources of information on the problem to be investigated is one of the important steps in the planning of any research study. The related literature forms the foundation upon which all future work will be built. It enables the investigator to know the means of getting to the frontier in the field of his research. It also provides ideas, theories, explanations, hypothesis and method of research valuable in formulating and studying the problems. It furnishes the researcher with indispensable suggestions about comparative data, good procedure, likely methods and tried techniques. The information about the activities of previous investigations stimulate the researcher to use each bit of knowledge as a starting point for new and further progress.

Although the general purpose of the review is to help the researcher develop a thorough understanding and insight into previous work and the trends that have emerged, the review can also help in reaching a number of important specific goals. It enables the researcher to define the limits of his field. It helps the researcher to delimit and define the problem. The knowledge of the related literature brings the researcher up-to-date on the work which others have done and thus to state the objectives clearly and concisely. By reviewing the related literature, the researcher can avoid unfruitful and useless problems

areas and his endeavors would be likely to add to the knowledge in a meaningful way. Through the review of related literature, the researcher can avoid unintentional duplication of well-established findings. It gives the researcher an understanding of the research methodology which refers to the way the study is to be conducted. It helps the researcher to know about the tools and instruments which proved to be useful and promising in the previous studies. It also provides insight into the statistical methods through which the validity of results is to be established. Another important reason for reviewing the related literature is to know about the recommendations of previous researchers listed in their studies for further research.

2.2 LEARY'S MODEL FOR INTERPERSONAL BEHAVIOUR

The ultimate goal of teaching is to assist students to become independent and self-regulated learners. During this process the teacher has to undertake many different jobs with main focus being on communication with students. Thus teaching and learning can be considered as a communication process. The interpersonal behavior of the students and teachers depend on the effectiveness of this communication process. By interpreting the class as a communication system, a number of characteristics of the teacher-student communication can be considered. Arends (1998) believes that an open and honest communication process is the single most important variable for promoting positive classroom environment.

In clinical and psychological research settings, Leary (1957) and his co-workers analyzed hundreds of dialogues between patients and their therapists which included discussions in order to classify the different types of behavior exhibited. These dialogues and discussions were divided into short statements representing different kinds of interpersonal behavior. The statements were coded and arranged into 16 dimensions with two levels of behavior. The level one behavior was classified in terms of interpersonal mechanisms, gestures or reflexes and involved two-way interpersonal codes. The level two behaviors are classified in terms of interpersonal attributes.

Leary believed that the way humans communicate is indicative of their personality. Along with other psychologists, he felt that the most important forces driving human behavior are the reduction of fear and the corresponding maintenance of self-esteem. Therefore, when people communicate, they consciously or unconsciously choose behaviors which avoid anxiety and allow them to feel good about themselves. These may differ from each person and depend up [on the personality of the communicating partner. One individual might choose an authoritarian style, whereas another prefers dependency to achieve the same end (Wubbels, Creton, Levy &Hooymayers, 1993).

Leary then developed a model which describes and measures specific interpersonal behavior. The model places personality at the heart of the interpersonal behavior. The model allows for a graphic representation of all human interaction. Using the model, it is possible to record the behavior and interaction during a dialogue between one person and another. Both normal and abnormal behavior can be represented on the same scale which can not only be used as a diagnostic tool in psychotherapy but also in management settings.

The 16 dimensions suggested by Leary and his colleagues were later reduced to eight categories of interpersonal behavior (Wubbels, Creton, Levy &Hooymayers, 1993). This two-dimensional coordinate system of representing interpersonal behavior mapped the degree of cooperation between the individual's communication on the horizontal axis and the degree of control or influence over the communication process of the communicator being observed on the vertical axis as depicted in figure 2.1. Leary originally labeled the cooperation-opp0sition axis the "Affection-Hostility" continuum (Wubbels, Certon, Levy &Hooymayers, 1993). Although Leary's model was an adequate model to represent interaction behavior and withstood testing in psychological research settings, the 128-item Interpersonal Adjective Checklist (IAC) that Leary used to gather his data about four levels of behavior intensity was cumbersome in an education setting, (Wubbels, Creton, Levy &Hooymayers, 1993) and contained many items which were not pertinent to teachers.

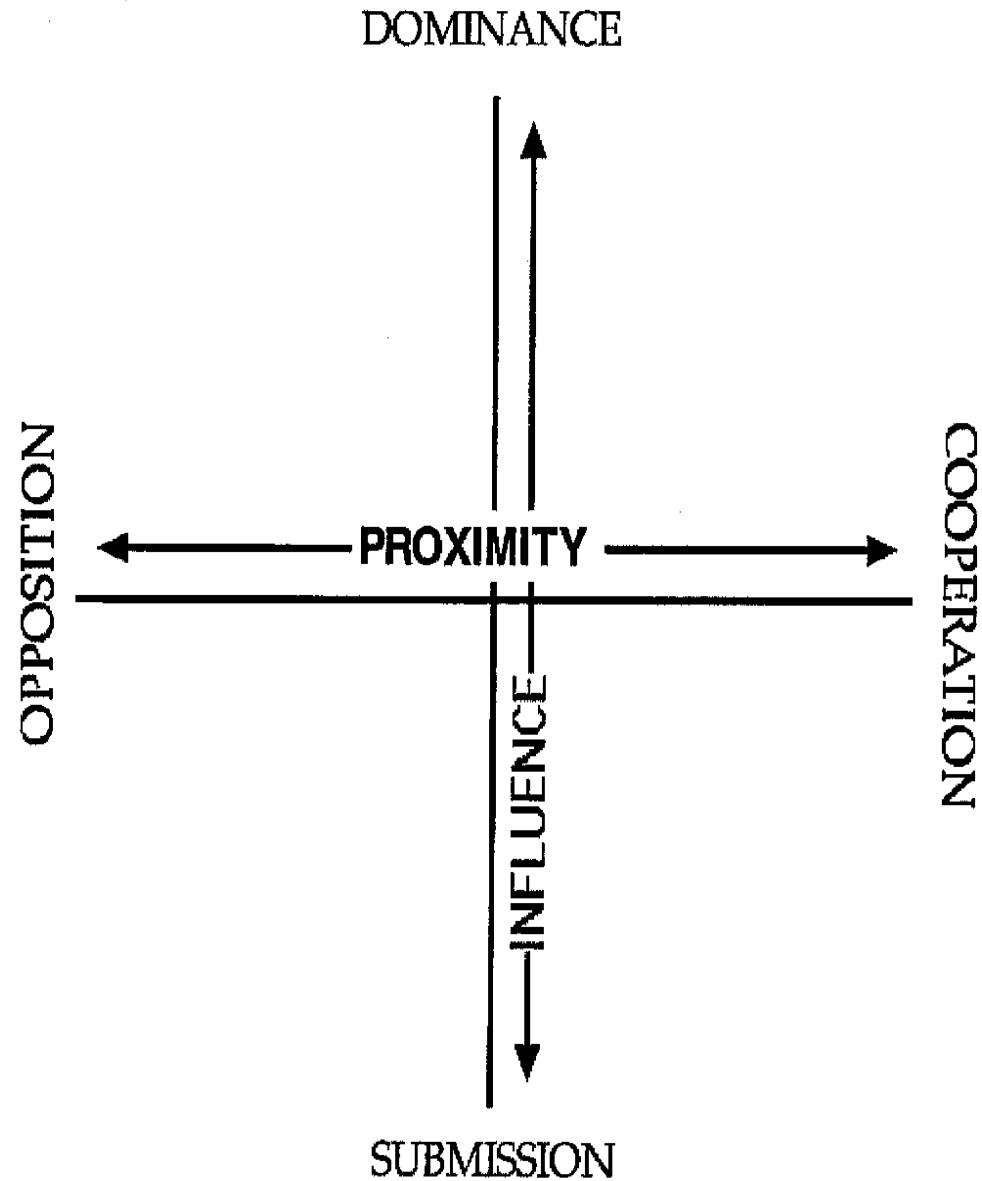


Figure 2.1. The two-dimensional coordinate system of the Leary Model.

(Source: Wubbels, Creton, Levy &Hooymayers, 1993, p.15).

This two-dimensional model based on the work of Leary (Wubbels, Creton, Levy, &Hooymayers, 1985) has been used widely in educational settings (Wubbels, Creton, Levy, &Hooymayers, 1993). Also the cross-national validation of the Leary model has shown it to be culturally universal (Lonner, 1980; Wubbels& Levy, 1991).

2.3 RESEARCH STUDIES ON TEACHER –STUDENTS INTERACTIONS USING QUESTIONNAIRE ON TEACHER INTERACTION (QTI)

The Questionnaire on Teacher Interaction has been extensively used in educational research at the international level and its utility has been well established in the literature (Brekelmans, Wubbels&Creton, 1990; Den Brok, Levy, Rodriguez &Wubbels. 2002; Fisher, Fraser &Rickards, 1997; Fisher, Henderson & Fraser, 1995; Gorham &Zakahi, 1990; Hecht, Anderson &Ribeau, 1989; Levy, Rodriguez &Wubbels, 1992; Rickards& Fishers, 1998; Scott & Fisher, 2000; Wubbels, Brekelmans&Hermans, 1987; Wubbels, Brekelmans&Hooymayers,1991; Wubbels, Creton&Hooymayers, 1985; Wubbels& Levy, 1991; Wubbels& Levy, 1993,). The QTI has been focus of well over 120 (learning environment) studies in many countries (Den Brok, Brekelmans Levy, &Wubbels, 2002) and has been translated into more than 15 languages (Wubbels, Brekelmans, Van Tartwijk&Admiraal, 1997).

An instrument was required at lower secondary school science classes, to measure teacher-student interpersonal behavior. This gave rise to a multi-scale instrument having good internal consistency within scale and is able to differentiate between student perceptions in different classrooms. In this section the history and development of the teacher-student interpersonal behavior questionnaire, the QTI is discussed. The various forms of the QTI and its use in past research have also been discussed in brief.

The studies using the QTI as an instrument have demonstrated that the nature of relationship between teacher and his/her students is an important aspect of the learning environment (Fraser & Walberg, 1991) and despite being a very recent instrument the behavior patterns that are established in a classroom learning environment are relatively stable over time (Brekelmans, Holvast&Van Tartwijk, 1990; Fraser & Walberg, 1991). Creton, wubbels, and Hooymayers (1993), Wubbels, Creton, and Holvast, (1988) and Fraser (1991) suggested that the circular communication processes that consist of behavior as well as determine behavior develop early in the year in a classroom. Once these behaviors have been developed and stability has been achieved in the classroom

both students as well as teachers resist change. It has been suggested that student and their teacher should have interacted at least for a period of two to three months prior to the administration of the QTI to a target group as the items ask questions about the teacher's behavior over a long period of time, not just during the current lesson (Brekelmans, 1989; Van Tartwijk, Brekelmans, and Wubbels, 1993). It is also assumed that the nature and patterns of the teacher-student interpersonal behavior that are established during this time are very likely to remain relatively stable for the remainder of the year (Fraser & Walberg, 1991). This conveys that the student-teacher interaction nature and patterns will remain the same if the questionnaire is administered after the initial two to three months setting in period (Brekelmans, 1989). However, for the study described in this thesis the survey data were collected towards the end of the academic session when students and teacher interaction patterns were well established.

The QTI (Wubbels & Levy, 1991, 1993) was designed to assess teacher-student interpersonal behavior in lower secondary classroom and developed out of a need to measure secondary students and teachers' perceptions of teacher behavior. In early 1980s, the original version of the QTI in Dutch language was developed in four trials in the Netherlands and had 77 items, which were arranged in the eight scales corresponding to the eight sections of the model for interpersonal teacher behavior (Wubbel, Certon, Levy, & Hoonmayers, 1993). Nine to eleven items were included in each of the eight scales. These 77 items were derived from the 128 items of the ICL (Wubbel, Creton, & Hooymayers, 1992) and later these 128 items were modified, reworded and finally reduced to 77 items. The other change made from the ICL was change of response from 'yes' or 'no' to a five point Likert type response. Later, an American version of the QTI was developed in the English language, and had 64 items (Wubbels & Levy, 1991). The items deleted from the Dutch version were on the basis of correlation analysis of the 77-items version to 64 items in the American version.

An Australian version of 48 items followed these two pioneering versions of the QTI (Fisher, Fraser & Wubbels (1993). This shorter version has six items in each of the eight scales. Table 2.1 represents the nature of the QTI by providing a scale description and a

simple item for each of the eight scales. This 48-item Australian version of the QTI was used for this study.

Table 2.1 Description of Items for Each Scale in the QTI

Scale	Description
Leadership [DC]	Extent to which teacher provides leadership to class and holds student attention.
Helping/Friendly [CD]	Extent to which the teacher is friendly and helpful towards students.
Understanding [CS]	Extent to which teacher shows understanding and care to students.
Student Responsibility/Freedom [SC]	Extent to which the students are given opportunities to assume responsibilities for their own activities.
Uncertain [SO]	Extent to which teacher exhibits her/his uncertainty.
Dissatisfied [OS]	Extent to which teacher shows unhappiness/dissatisfaction with the students.
Admonishing [OD]	Extent to which the teacher shows anger/temper and is impatient in class.
Strict [DO]	Extent to which the teacher is strict with demands of the students.

Responses to all the versions of the QTI items are recorded on a five-point scale scoring from 1 (Never) to 5 (Always) on the questionnaire only. The use of a separate response sheet is not practiced with this instrument and thus reducing the item in responding and facilitating the quick administration of the QTI. From the administration of the QTI to students, we get information about the perceptions of the teachers and the perceptions of their students of the interpersonal behavior of that teacher. In the same manner when administered to teachers we get information about teachers' perception of their own behavior or the behavior they consider ideal. However, in this study only the student version of the QTI was used. All the 48 items of the Australian version of the QTI are arranged consistently in cyclic order and in blocks of four. This is clearly indicated in appendix A. Items 1-24 assess the four scales called leadership, Understanding, Uncertain and Admonishing, whereas items 25-48 assess the scales of Helping/Friendly, Students Responsibility and Freedom, Dissatisfied and Strict.

In addition to the three forms of the QTI already discussed a primary level version of the QTI has been developed, trialed and validated in Singapore (Goh & Fraser, 1995; Goh & Fraser, 1996; Goh, Young & Fraser, 1995). This version has been adapted from the 48-item QTI in order to be more readable for the younger students and has a revised three-point response format. Further to this another modification of the QTI has resulted in the Principal Interaction Questionnaire (PIQ) (Cresswell & Fisher, 1997). This questionnaire assesses the teachers or school principals' perceptions of principal interpersonal behavior using the same eight scales of the QTI.

2.3.1 Reliability and Validity of the QTI

The reliability and the validity of the QTI has been investigated in various countries, including the Netherlands, USA and Australia. Wubbles (1993), described the Australian study in which 792 students and their 46 teachers were involved. The sample came from year 11 science and mathematics classes in Western Australia and Tasmania. The degree of which each item in a scale measures the same dimensions of behaviour for the teacher is called the scales' internal consistency or reliability. In the studies carried out in the Netherlands and the USA, Wubbels and Levy (1991) reported that seven of the eight

measured reliabilities were in excess of .90. In the Australian study the reliabilities ranged from .68 to .85. This is considered to indicate a satisfactory level of reliability.

The questionnaire was also investigated to ascertain the degree of agreement between students about the behaviour of individual teachers. Using Cronbach's alpha reliability measures, Brekelmans (1989) calculated a mean of 0.90 for 206 classes. Wubbels et al (1993, p. 21) wrote that this was considerably higher than the standard often used for inter-observer reliability of 0.8'. When she looked at the generalizability of the QTI, Trekehnans (1989) concluded that it should be administered to at least ten students in the class to be reliable, that it does not need to be administered more than once a year and that a minimum two classes should complete the questionnaire on any one teacher. The inter-class correlations for the QTI were found to be above 0.8 for every scale leading to the conclusion that differences in student perceptions were more a result of class differences than student differences.

Wubbels, Creton and Hooymayers wrote that, according to their investigations there is a relationship between interpersonal teacher behaviour and student outcomes (1990). It appears that this relation between the students' perceptions of interpersonal teacher behaviour and student outcomes is stronger than the relation between curriculum, teachers' opinions and the students' perceptions of other aspects of the learning environment on the one hand and student outcomes on the other hand.

The Questionnaire on Teacher Interaction (QTI) which Wubbels et al developed has been used to plot profiles of various teacher behaviours and a teacher typology classification was developed. There were eight teacher type described. Some of the terms used to describe the different types of teachers were directive, authoritative, tolerant, uncertain and repressive. The QTI has also been used for the professional development of teachers (Fisher, Fraser and Cresswell, 1995). They described students' perceptions of their science teachers' and found the typologies were different, for example, for a beginning teacher and one who had many years of experience. The beginning teacher had a higher level of uncertainty compared to the experienced teacher.

2.3.2 Development of the Principal Interaction Questionnaire (PIQ)

An assumption underlying this study is that the theory underpinning the Questionnaire on Teacher Interaction to measure a teacher's interpersonal behaviour with students could also hold true for measuring a principal's interpersonal style with teachers. In order to investigate the principal's interaction style with teachers a questionnaire was developed.

This had been done firstly by Kremer-Hayon and Wubbles (1993), who described the development of the Questionnaire on Principal Interaction (PIQ) from the Questionnaire on Teacher Interaction. The original Dutch and American versions were translated into Hebrew. Some of the scales were also changed – for example Student Responsibility and Freedom became Giving Teacher Responsibility and Freedom, admonishing behaviour became objecting. A 62 item questionnaire was the result and responses from 96 teachers in Israel, were correlated with a measure of teacher satisfaction. The Principal Interaction Questionnaire (PIQ) (Table 2.2) was developed from the 48-items version of the QTI. In designing the PIQ a number of criteria were seen as being desirable:

1. The questions should be designed to allow for a complete analysis of the eight sectors of the Leary Model.
2. The items should be written to focus on the interpersonal behaviour of the principal – not a general questionnaire on the principal's leadership style.
3. Keeping in mind the time pressure that teachers work under, the questionnaire should be relatively economic in the number of items, so that it could be completed in one session of around twenty minutes.
4. It should be designed so that the principals can see the relevance to their own schools.
5. The format should be easy to handle without the constant need to be shuffling pages to find instructions.

Table 2.2 Description of Items for Each Scale in the PIQ

Scale Name	Description of associated behavior	Sample item
Directive Behavior	Notice what's happening, lead, organize, give orders, set tasks, determines procedure, explain, and hold attention give directions.	This principal gives clear directions.
Encouraging Behavior	Assist, shows interest, join, behave in a friendly manner, able to make a joke, inspire confidence and trust.	This principal takes a personal interest in teachers.
Understanding Behavior	Listen with interest, empathies, show confidence and understanding, accept apologies, looks for ways to settle differences, be patient, and be open with teachers.	If teachers have something to say, this principal will listen.
Giving teachers Independence behavior	Give teachers opportunity to work independently, allow teachers time for professional development, and give freedom to choose teaching methods.	This principal gives teachers the opportunity to develop their own courses.
Uncertain Behavior	Keep a low profile, hesitant, timid, not sure what to do.	This principal changes his/her mind.
Disapproving Behavior	Think teachers are not giving their best, criticize, question, suspicious.	This principal puts teachers down.
Aggressive Behavior	Get angry, look down on the teachers, express irritation, punish.	This principal is impatient with the teachers at this school.
Strict Behavior	Keeps rein tight, check, judge, strict adherence to rules and regulations, inflexible.	This principal keeps a tight rein on teachers' activities at school.

Items for the PIQ, therefore, needed to differ from those in the QTI in two important ways. First, each item had to be appropriate to the context of a whole school, rather than the classroom (as in the case of the QTI). Secondly, items were modified or replaced so that the behaviours that were not relevant to principals were excluded, while others items were included to measure that particular scale. For example, the QTI item, “This teacher realizes when we don’t understand”, was not seen as being relevant in the principal-teacher context, although it is important in the student’s learning process. In the area of freedom/responsibility, items of a professional nature relating directly to teaching were included, such as, “teachers at this school have the opportunity to choose their own teaching load.”

The final version of the PIQ is composed of six items for each of the eight scales of interpersonal behaviour. Possible responses for each item are Never, Rarely, Sometimes, Often and Always. In the PIQ, the names of the some of the scales were changed from those used with the QTI to describe better the interpersonal behaviour of principal, rather than teachers. For examples, admonishing behaviour was renamed Aggressive behaviour, dissatisfied became Disapproving, Student Responsibility and Freedom became Giving Independence, Strict became Strict/Inflexible, and Helping/ friendly became Encouraging. It was also thought that ‘Leadership behaviour’, in this context, was too vague to describe any particular type of interpersonal behaviour and so it was replaced with ‘Directive behaviour’.

The actual version of the PIQ was reworded to provide a version which gives teachers the opportunity to express their perceptions of ideal principal behaviour. An example of this rewording was to change item 9 from “This principal gives clear directions” to “The Principal would give clear direction”. It was thought that this slight rewording would not unduly affect the reliability and validity of the questionnaire in the study.

In order to make directions for responding clearer, items in the principals’ actual version of the PIQ were reworded to be framed in the first person, because the principals were assessing themselves. An example of a change is from “If teachers have something to

say, this principal will listen” in the teachers’ form to “If teachers have something to say, I will listen” in the principals’ form.

2.4 RESEARCH STUDIES USING THE QTI

Wei, Brok and Zhou (2009) have conducted a study on teacher interpersonal behavior and student achievement in English a foreign language classroom in china. They examined the relationship between English as foreign language (EFL) teachers’ interpersonal behavior and students’ fluency in English in secondary education in china. A total of 160 students from four classes in the southwest part of china were asked to assess their teachers’ interpersonal behavior using the Questionnaire on Teacher Interaction (QTI). This was the first time that the QTI was successfully translated and used (in EFL classrooms) in china. Cronbach’s a reliability coefficient for the scales were adequate, while confirmatory factor analyses provided support for the theoretical framework behind the questionnaire. Results showed that teacher uncertainly was negatively correlated with student achievement. Furthermore, the degree of teacher cooperation with students was the only significant predicator for student achievement, but its effect disappeared when student background variables were taken into account. Results also indicated a discrepancy between students’ perceptions of preferred and actual teacher interpersonal behavior. The tolerant-authoritative profile was the most common interpersonal style based on Chinese students’ perceptions.

Brok and cakiroglu (2010) has conducted a study on the importance of teacher-student interpersonal, relationships for Turkish student’s attitudes towards science. The purpose of this study was to examine associations between Turkish high school students’ perception of their science teacher’s interpersonal behavior and their attitudes towards science. Student’s perceptions of the teacher-student interpersonal relationship were mapped with the Questionnaire on Teacher Interaction (QTI), which uses two relational dimensions: influence and proximity. Data on student’s subject- related attitudes were collected with the test of science related attitudes (TOSRA). A total of 7484 students (Grades 9 to 11) from 278 science classes (55 public schools) in 13 major Turkish cities participated in the study. Multi-level analyses of variance indicated that influence was

related with student enjoyment, while proximity was associated with attitudes towards inquiry and with enjoyment.

Gueti, Lankmayr and weinhofer (2010) conducted a study on enhanced approach of automatic creation of test items to foster modern learning setting. Assessment has to be seen as an integrated and important activity in the learning process. In particular, modern educational approaches – such as self-directed or exemplary learning- and personalized learning activities cause a tremendous effort or make it even impossible to prepare appropriate and individualized test items, assess them and provide feedback. This situation has motivated the Advanced Educational Media Technologies (AEMT) Group at Graz University of Technology to initiate a research program on e-assessment to cover the entire life cycle of the assessment process by semi-automated and automated approaches. In this paper we focus on the automated process to create different types of test items out of textual learning content, more precisely to create single choice, multiple-choice, completion exercises and open ended questions. Started in previous re-search activities by applying statistic approaches to summarize learning content and to identify most important words, our most recent approach applies a combination of static and natural language processing as well as semantic methods to identify most important concepts on an abstracted level. In our enhanced approach, identified concepts and differently related concepts represent the underpinning input for the test item creation. The implemented prototype can process learning content stored in various file formats, extracts most important content and related concepts, creates different types of test items and reference answers, and supports online assessments as well as exports the test items in QTI format. In this paper we cover in particular the following aspects: the motivation for automated test item creation, related work, requirement and design of the enhanced tool, implementation and usage viewpoints. Furthermore, we outline a study on the evaluation of the prototype, which suggests that the quality of extracted concepts and created test items is comparable with such ones provided by humans.

Lee (2010) examine that there is a strong tradition in classroom environment research involving investigations of associations between student's outcomes (achievement and attitude) and the classroom learning environment. This study focuses on how the

perception of primary 5(11-year-old) gifted education programme (GEP) pupils on their science teacher could affect their cognitive achievement and attitude towards science. A sample of 279 students from GEP classes from six (out of a possible nine) Singapore GEP primary schools participated in this study. The questionnaire on teacher interaction (QTI) was employed to collect quantitative data. Qualitative data were also collected to complement the quantitative data. Research objectives in this study include determining the validity and reliability of the 48-item version QTI in primary science gifted classes and identifying the types of science teachers in the GEP in Singapore based on the Australian QTI- based typologies. The QTI covers eight scales of teacher behavior. Generally, statistic showed that there is strong association between the leadership scale and students attitude towards science. A teacher perceived highly by student on the leadership scale would be confident and assertive in class. A strong association between the strict scale and student's cognitive achievement is also reported. In this study, no gender differences in the students.

Madu (2010) investigated associations between teachers' interpersonal behavior, the classroom learning environment and students' outcomes. The questionnaire on Teacher Interaction (QTI), what is happening in this class? (WIHIC), and Test of Science-Related Attitudes (TOSRA) were used with a sample of 785 students from 75 classes in five high schools in New York. Results from New York State Regents examination taken in June were collected for 603 students in 37 classes as a measure of achievement. Data analyses supported the factor structure, internal consistency reliability and discriminate validity of the WIHIC questionnaire and the attitude scales from TOSRA, as well as WIHIC scales' ability to differentiate between classrooms. Data analyses also supported the internal consistency reliability of the QTI and its ability to differentiate between classrooms. Also, the circumflex nature of the QTI was supported by analyzing its pattern of scale inter-correlations. Overall, the learning environment instruments (QTI & WIHIC) and attitude instruments (TOSRA) were found to be valid and reliable when used with high school science students in New York. Simple correlation and multiple regression analyses revealed positive associations between the learning environment and student's attitudes. All seven WIHIC scales were statistically significantly correlated with attitudes to

science. Overall teacher support was the strongest independent predictor of student attitudes to science. Positive but weak associations were also found between learning environment and achievement (especially Task Orientation, Equity, Student Cohesiveness and Involvement). Also equity was positively and independently associated with achievement. Associations were found between teachers' interpersonal behavior and attitudes (Adoption of Scientific Attitudes and Enjoyment of Science Lessons) and achievement. With the student as the unit of analysis, the adoption of scientific attitudes scale was significantly correlated with all the QTI scales except strict. With the class as the unit of analysis, all the QTI scales were significantly correlated with Adoption. Leadership and understanding were the only independent predictors of adoption. Leadership, Understanding, Helping/Friendly, Uncertain, and Dissatisfied scales were positively and independently associated with Enjoyment of Science Lessons with the student as unit of analysis whereas, with class as unit of analysis, only uncertain was positively and independently associated with Enjoyment. Associations were mostly in the expected directions, but with a few exceptions (e.g. uncertain behavior was negatively related to student achievement). Commonality analyses were undertaken to investigate the unique and common contributions of the WIHIC and the QTI scales to the variance in student outcomes. The benefit of using both instruments together to predict Enjoyment, but not Adoption, was supported by the findings. Therefore, it is worthwhile to include both the WIHIC and QTI in the same study of students' enjoyment of science. For achievement, neither the WIHIC nor the QTI accounted for much unique or common variance. A subsample of 40 students was interviewed using questions pertaining to each scale of the QTI, WIHIC and TOSRA in order to check the construct validity of the questionnaires. Findings from these interviews reinforced the validity of the WIHIC, QTI and TOSRA for use with the sample of high school biology students in New York because interview findings were mostly consistent with the means obtained for each scale. By providing validation data for the WIHIC, QTI and TOSRA, this study has provided New York teachers with instruments that can easily be used to assess associations between learning environment, teachers' interpersonal behavior and student outcomes. Also, this research has practical implications that suggest the teachers wishing to improve their students' attitudes and achievements should place greater emphasis on

Leadership, Helping/Understanding, and student Responsibility/Freedom in their classroom. Also student cohesiveness, teacher support, involvement, cooperation and equity should be emphasized.

Fisher, BrokWaldrip and Dorman (2011) conducted a study and reports the first development in Australia of primary science teacher typologies of teacher-student interpersonal behavior, which we measured by students perceptions using the questionnaire on teacher interaction (QTI). Earlier work with the QTI in the Netherlands has revealed eight different interpersonal styles, which were later confirmed with an American sample of secondary-school teachers and which were similar to type found with Australian secondary-school science teachers. The present study investigated the extent to which typologies found in earlier studies also apply to primary teachers. A cluster analysis was used to determine Australian typologies and to compare these with earlier findings. Prior typologies could only be partially confirmed, and the found typology of six styles was able to explain variance in both student outcomes and perceptions of cultural elements of the learning environment.

Kayes (2012) conducted research that effective teaching and the associations between parental and student perception of teacher-student interaction in a New Zealand primary school. The questionnaire on teacher interaction (QTI) has been used to identify the student perception of the teacher and a parent perception questionnaire (PPQ) has been used to gain the perceptions of the parents towards the teacher. This study is significant for a number of reasons. It is the first where the questionnaire on teacher interaction (QTI) has been used in a New Zealand primary school to identify the interpersonal interactions of the classroom teacher. It will identify the student's perception of the interpersonal behavior of their teachers. This will assist teachers in becoming more effective in teaching and learning. It will enable teachers to identify possible professional development opportunities through interventions to assist them in becoming more effective teachers and students more effective learners. It will also allow teachers to see themselves through the eyes of their students and it will provide honest feedback for the teacher on which to reflect. Also, it will provide the current parents perceptions on the

effectiveness of teachers and debate the impact this has had on parental perception of the school environment.

Schofield (2013) conducted a research on the associations between student levels of achievement and perceptions of teacher-student interactions. This thesis reports on a research study of the associations between the interpersonal interactions students have with their teachers and shifts in cognitive achievement. Effect sizes were calculated to determine the shifts students had in cognitive achievement and these were compared to the perceptions of the teacher student interactions that were gathered using the Questionnaire on Teacher Interaction (QTI). This was one of the first times that the QTI was used in a New Zealand primary school. The 48-item QTI was used and shown to be both valid and reliable within the New Zealand primary school context. The study found that there was a correlation between the interpersonal interactions and cognitive achievement of students. Students generally had better achievement shifts with teachers that matched the Tolerant/Authoritative typology and lower shifts with teachers who matched the directive typology. The study also confirmed that there is variance of teachers within schools. It is this variance that needs addressing and the tools used in this research enable teachers and educators to make decisions about what is working within a classroom and what is not. This leads to opportunities for the professional development of teachers, which will in turn improve both the learning environment and cognitive achievement of the students. Teaching and learning are complex and determining what and where to improve can only happen effectively when you have evidence of what is occurring. The tools used in this study provide that evidence, and when you have the evidence, you have the ability to make powerful changes in the lives of students.

Sivan and Chan (2013) conducted a study of teacher interpersonal behavior and secondary students' cognitive, affective and moral outcomes in Hong Kong. This study validated the Chinese version of the Questionnaire on Teacher Interaction (QTI) in the Hong Kong context as well as examined the relationship between students' perceptions of interpersonal teacher behavior and their cognitive, affective and moral learning outcomes. Data were collected with the QTI and four other measures of student learning outcomes including a modified enjoyment scale of the test of science related attitudes, academic

achievement, attitudes towards the teacher and learning of values and attitudes. A total of 612 grade 9 students from 16 mathematics, Chinese and English classes in six schools participated in the study. The Chinese version of the QTI was found to be a valid and reliable measure. Multiple regression analysis revealed that students' perceptions of their teachers' interpersonal behavior were significantly related to their cognitive, affective and moral learning outcomes.

Jailani and Arif (2014) conducted a study on the interpersonal behaviors of trainee teachers with their students during teaching practicum. This study investigated the interpersonal behaviors of 85 trainee teachers from the faculty of education, UITM towards their students during their teaching practicum. Questionnaire on Teacher Interaction (QTI) was used to determine the frequency of the eight identified behaviors exhibited by the respondents. Analysis of the acquired data showed that the trainee teachers from the faculty of education, UITM frequently showed behaviors which indicate understanding, friendliness and leadership qualities. The pattern of all the eight interpersonal behaviors combined indicates that the respondents were tolerate and authoritative towards their students. The analyzed data also indicate that the respondents from different programmes have different interpersonal behavior from one another. From the results of this study, it is suggested that further steps be taken to improve the quality of interpersonal behaviors portrayed by trainee teachers.

Rahmawati, Koul and Fisher (2015) report a study of effectiveness of co-teaching and co-generative dialogue in science learning and teaching in lower secondary science classes. The idea of co-teaching and co-generative dialogue – first proposed by two leading educationists, Roth and Tobin, in early 2000 – made an international impact in educational research. In the context of the research, co-teaching and co-generative dialogue were applied for transforming teacher interpersonal behavior. The pre-validated Questionnaire on Teacher Interaction (QTI) was administered to all year nine classes at three selected secondary schools to investigate existing teacher interpersonal behaviors and to further validate the QTI. This was followed by the implementation of co-teaching and co-generative dialogue in three selected science classrooms, one from each school. Multiple research methods (interview, students' reflective journals, and questionnaire)

were used to develop in depth understanding of the participants. Co- teaching and co-generative dialogue helped in transforming teacher interpersonal behavior and teachers' pedagogical praxis. This process also had implications for improving students' engagement, achievement and behavior.

Kumari, Goswami and Gupta (2015) studied on teacher student interactions in technology supported teacher education classrooms. This study reports the use of questionnaire on teacher interaction (QTI) for assessing the students' perceptions of their teacher interpersonal behavior in a technology supported teacher education classroom. Data from 317 students studying in a teacher education college was analyzed for reliability and validity of the questionnaire in teacher education classrooms. The results of analysis strongly supported the reliability and validity of the questionnaire for use in technology supported classrooms at the teacher education level. Student's perceptions of teacher student interactions with respect to their previous qualification, gender and teaching subjects were found to be partially significant on the various scales of QTI.

Shafaque (2015) investigated one of the key elements of quality teaching, the teacher interpersonal behavior and its impact on pre service teacher's self-regulatory engagement. Data were collected with two extensively used instruments Questionnaire on teacher interaction QTI and Motivated Strategies for Learning Questionnaire (MSLQ). Data analysis revealed that only one of the two dimensions have significantly negative effect on regulatory engagement of trainee teachers.

Manhas (2017) conducted study the teacher student interactions and student's attitude towards science at the secondary level in selected CBSE affiliated schools of Jammu city. The tool used to fulfill the purpose of the study are the Questionnaire of Teacher Interaction (QTI) for assessing Teacher-Student interaction and Attitude Towards Science Scale derived from the TROFLEI (Technology rich outcomes focus outcome learning environment inventory) to know the students' attitude in the science classroom in CBSE schools in Jammu. The sample include 150 students (both boys and girls) at the secondary level i.e. grades 9th and 10th from five selected CBSE affiliated schools of Jammu city. This reliability and validity results shows that the QTI is a reliable and valid tool for studying the teacher interpersonal relationship in secondary classroom of CBSE

affiliated schools in Jammu. The results of the study show that the students see their teachers as good leaders most of the time and have also rated their teachers in terms of exhibiting helpful and friendly nature, in understanding them and giving students freedom and responsibility in the classroom. In fact, the positive factors have been exhibited by the teachers quite often in the classroom. The result also shows that generally students exhibit a positive attitude towards science which means that most of the time students look forward for a lesson in the science subject and also enjoy the lessons in this subject. Significant associations are reported between the different scales of the Questionnaire of Teacher Interaction (QTI) and Attitude Towards Science Scale. The variance in the students' attitude towards science can be attributed to Teacher-Student interactions in the classroom. This means that teacher interpersonal behavior may affect the development of a positive attitude towards science among the students. No gender differences have been reported in teacher interpersonal behavior as measured by QTI and there are no gender differences between male and female students' attitude towards science. Data analysis reveals that there is significant difference in students' perceptions about their interpersonal relationship at the secondary level in CBSE affiliated schools in Jammu city however, no significant differences between the five CBSE schools in their attitude towards science at secondary level have been observed.

2.5 RESEARCH STUDIES ON TEACHER-PRINCIPAL INTERACTION USING PRINCIPAL INTERACTION QUESTIONNAIRE (PIQ)

Kambeya (2008) conducted a study was to examine teacher's perception of their principal's interpersonal communication skills in relation to teacher performance. This was a qualitative study, where an autoethnographic mode of inquiry was employed. Autoethnography describes research studies of a personal nature (Ellis &Bochner, 2000). Using an interactive interview technique, five teacher participants were asked questions in an effort to elicit teacher's perception of principal's interpersonal communication skills as they relate to teacher's performance. This study is significant in determining which interpersonal communication skills as perceived by teachers were most effective and essential in increasing teaching performance. Findings revealed that

face to face communication as the most common means preferred by teachers in the teacher- principal dyad. Attitudes, ideas, behavior of the principals do affect the performance of teachers. Principals easily articulated goals and missions of the school, but face-to-face interactions were most difficult for principals. Poor interpersonal communication of the principal affected the emotional and 2 physical states of teachers such as depression, low self-esteem, feelings of incompetency and seeking new place of employment. When principals demonstrated good interpersonal communication skills, the teachers were motivated to give more than 100% effort.

Ang (2008) conducted a research on perceptions of school environments III recent years reveals that the principal's effect on the effectiveness of technology integration and overall school environment is significant. This study first reports the validation of both the Principal's Interaction Questionnaire (PIQ) and the Computer Attitude Scale (CAS) questionnaire in Singapore primary schools. The second objective was to investigate associations between teachers' perceptions of the principal's interpersonal behavior and their attitudes to use of information and communication technology in teaching and learning in the Singapore primary school environment. The third objective was to investigate associations between the teachers' perceptions of their principal-teacher interaction, their individual characteristics and their attitude towards the use of information and communication technology in teaching and learning in that environment. The study involved 476 teachers in seven government and government-aided Singapore primary schools who responded to the 48-items PIQ and the 32-item CAS. This is a first ever study in Singapore using the PIQ instrument which assesses eight scales of teacher perceptions of the school environment. Previous research had confirmed the reliability and validity of the PIQ for use with secondary school teachers in Australia. Statistical analysis done in this research has provided further evidence on the reliability and validity of the PIQ for use with primary school teachers in Singapore. The CAS was also shown to be reliable and valid. Qualitative and quantitative research methods were used to collect data for the present study. The study showed that the dimensions of the PIQ were found to be statistically significantly associated with teacher attitude scores and their individual characteristics such as gender, age, and experience with teaching at a particular

level, experience with ICT instructional use, daily experience with ICT use, level currently teaching and if the teachers own a computer at home.

Price (2011) examined that the attitudes of principals and teachers create an atmosphere for learning, often referred to as school climate that influences school effectiveness. Other research shows that atmosphere of trust, shared vision, and openness creates positive school climate conditions. Little is known, however, about how these climates emerge in some schools and not others. There is good theoretical reason to suspect that interpersonal relationships between principals and teachers influence school professional's attitudes that define the broader school climate. Theories from organizational studies, social psychology and sociology inform hypotheses about how affective; cathectic responses from interpersonal principal-teacher relationships explain variation in school professional's satisfaction, cohesion and commitment levels.

Jackson and Marriott (2012) present the design and test of a measure of school leadership as an organizational quality through the interaction of principal and teacher instructional influence. The organizational leadership model hypothesizes four distinct conditions of school leadership, and the analysis investigates the relationship between teacher, principal, and school outcomes; school descriptors; and a school's category in the organizational leadership model. Theoretical orientation: Ogawa and Bossert's conception of leadership as an organizational quality serves as the theoretical foundation of this study, along with contemporary theories of distributed leadership, influence as leadership, and measurement of leadership. They draw teacher, principal, and school restricted-use data from the 2003-2004 schools and staffing survey. The sample consists of 7,950 schools, their principals and a random sample of teachers from each school. The school is the primary unit of analysis. Analysis: This study is conducted in two phases. In phase 1, the organizational leadership model (OLM) is tested for its ability to discriminate between teacher, principal and school outcomes through a series of one-way ANOVA models. In phase 2, a series of weighted ordered logit models explores the predictive power of school descriptors in determining the OLM category of schools. Findings: The analysis finds evidence that the Organizational Leadership Model is a robust measure of leadership as an organizational quality that effectively captures

differences in school leadership contexts at the level of principals' and teachers' perceptions of their influence that precede task-oriented behaviors. Additionally, the study highlights the troubling relationship between schools serving high-need populations and those typified by low levels of school leadership. Implications for Research and Practice: The article identifies several avenues for future research to extend inquiry on the potential of the Organizational Leadership Model to develop additional nuance in discriminating between relationships among school contexts, leadership conditions, and teacher, principal, and school outcomes. The article further urges those implicit in maintaining the status quo of poor leadership accountability in schools, including those in the research community, to seek interventions at the level of principal and teacher perceptions of and professional standards for their practice.

Price (2012) conducted a research on the attitudes of principals and teachers create an atmosphere for learning, often referred to as school climate that influences school effectiveness. Other research shows that atmospheres of trust, shared vision and openness create positive school climate conditions. Little is known, however, about how these climates emerge in some schools and not others. There is good theoretical reason to suspect that interpersonal relationship between principals and their teachers influence school professional's attitudes that define the broader school climate. Theories from organizational studies, social psychology and sociology inform hypothesis about how effective, cathetic responses from interpersonal principal-teacher relationships explain variation in school professional's satisfaction, cohesion and commitment levels. Research Design: Nationally representative data from the schools and staffing survey, 2003-04, match principals to teachers in public elementary schools. Using structural equation modeling, relational mechanisms between principals and their teachers are identified and explain positive principal attitudes. This process is then linearly regressed to explain the effects of these relationships on teacher's attitudes. Findings: Principal's relationships with their teachers affect principals and teacher's satisfaction, cohesion and commitment levels. Among principals, these positive work relationships improve job satisfaction, cohesion perceptions and commitment levels. Among teachers, substantial variation is explained directly by the relationship mechanism of principal's sharing expectations with

their teachers. Conclusions: School professional's attitudes form under similar organizational conditions as those of other workers. These relationships affect the schooling environment. Because of their centrality and leadership position, particular focus is paid to role of the principal in these relationships. The relationships of principals, as the school leader, strongly and directly affect teacher's attitudes which define the schooling climate.

Price (2015) conducted a research to link the social interactions between principals and their teachers to teacher's perceptions of their student's engagement with school, empirically testing the theoretical proposition that principals influence students through their teachers in the US charter school environment. The mediating influence of latent beliefs of trust and support are tested in this process. By analyzing pooled network and survey data collected in 15 Indianapolis charter schools using stepwise, fixed-effects regression techniques, this study tests the association between interactions of principals and teachers, on the one hand, and teacher's perceptions of student engagement, on the other. The extent to which latent beliefs about teachers-in particular, trust in teachers and support of teachers by the administrators-mediate this relationship is also tested. The findings of direct relationships between principal-teacher interactions and latent beliefs of trust and support are confirmed. Direct relationships between latent beliefs and perceptions of academic and school engagement are also confirmed. There is a relationship between principal-teacher interactions and teacher perceptions of student engagement, but the mediating effect of latent beliefs of trust and support accounts for much of the direct association. The reach ability of the principal remains a significant and direct influence on teacher's perceptions of academic engagement after accounting for trust and support.

Sharma (2017) conducted a research on perceptions of school environment in recent decades reveals that the principal's effect on the school environment is significant. This study of school environment compared teacher's perceptions of principal's interpersonal behavior. The purpose of this study was to assess the principal-teacher interaction in schools at the primary, middle and secondary level in selected schools of Jammu city. The principal interaction questionnaire (PIQ) was developed based on the questionnaire

on teacher interaction (QTI), which was first devised in the Netherlands to assess eight facets of interpersonal behavior, such as leadership and understanding. The Principal Interaction Questionnaire (PIQ) (Kermer-Hayon and Wubbels, 1993) was used in this study. It has been shown to be a reliable and efficient way of gaining information. A sample of 150 teachers including both male and female teachers was collected from 10 primary, middle and secondary schools of Jammu city. The reliability and validity result shows that PIQ is a reliable and valid instrument for studying the principal-teacher interactions. It has been shown to be a reliable and efficient way of gaining information. Data analysis reveals that usually the teachers see their principal as strict. Teachers have rated their principals in terms of having directive behavior, encouraging behavior, understanding behavior, giving independence to teachers, uncertain behavior, disapproving behavior, aggressive behavior and having strict/inflexible behavior. Results show that there are significant gender differences between male and female teachers in their interaction with the school principal. Significant differences have also been observed between the perceptions of various schools on all the PIQ scales. With regards to the level of appointment of teachers, it is observed that there is significant difference between primary, middle and secondary level teachers in their perceptions about their principal. This shows that the teachers perceive their principal interpersonal behavior in a positive and significant manner. The results obtained from the study credibly bring out the value of the principal-teacher interactions at the primary, middle and secondary levels

2.6 RESEARCH STUDIES ON PRINCIPAL RELATIONSHIP

Barnett and cormick (2004) examined that the transformational approaches to leadership have increasingly been advocated for schools. Research evidence suggests that the effect of leadership on student learning outcomes is mediated by school conditions such as goals, structure, people, and school culture. Using the combined approach of multilevel analysis and structural modeling, this study investigated the relationships of leadership with school learning culture. Data were collected from a random sample of 373 teachers. The results suggested relationships between leadership and school learning culture did exist, and they highlight the importance of individual principal-teacher relationships in schools.

Moye, Henkim and Egley (2005) investigated the relationships between teacher empowerment and interpersonal level trust in the principal. Trust is a fundamental element in well-functioning organizations. Studies of empowerment, a motivational construct, have suggested that empowering employees is a key factor in managerial and organizational effectiveness. An instrument was constructed to measure perceived teacher empowerment and level of interpersonal trust in the principal. Established measures of psychological empowerment and effect-and cognition- based trust were adapted for use in the study. Elementary school teachers in an urban school district in the USA completed the survey instrument. They found that teachers who perceived that they were empowered in their work environments had higher levels of interpersonal trust in their principals. Teachers who found their work personality meaningful, and who reported significant autonomy and substantial influence in their work environments had higher levels of interpersonal trust in principals. Their investigation was delimited by the study sample. Research on the empowerment-trust relationships should be extended to include middle and high schools, and schools in different regions with a broader range of demographics. The practical implications are that principals should consider suggested strategies that can strengthen teachers' perceptions of empowerment, reinforce trustworthy behaviors, and support beliefs in the honesty, integrity and reliability of supervisors. The study compliments the limited base of data-driven research in education and the non-profit sector that focuses on significant intervening variables associated with trust in organizations.

Edgersons, Kritsonis and herrington (2006) examined the effects of schools maintaining positive and healthy relationships between principals and teachers and to delineate those factors that facilitate and contribute to student academic success. Consequently, the purpose of the study will be threefold: 1) Examining school climate and culture phenomenon germane to the development of substantive principal-teacher relationships; 2) Identifying those principal-teacher relational components that foster and affect teacher performance; and 3) Analyzing the overarching effects of the building and maintenance of substantive principal-teacher relationships on student academic achievement.

Furthermore, it is the intent of the present study to hone in on these factors and report findings as one method of improving overall success for the nation's schools at large.

Ibrahim (2010) investigated the effects of school facility conditions on the delivery of instruction from the perspective of school principals in the USA. Research Design: By employing a multivariate co relational research design, the paper empirically investigated whether the quality of ten facility conditions effects the delivery of instruction after controlling three school and three student characteristics that also may affect the delivery of instruction. The conceptual framework of this paper envisions the physical capital, along with the human and social capitals, as one of the three main core elements for effective teaching and learning. The conceptual framework of the study incorporated facility conditions identified by Schneider and Castaldi. Consistent with the literature, the conditions of school facilities in conceptual framework included mainly cosmetic factors. The FRSS 88: Public school principal's perceptions of their facilities: Fall 2005 data set the National Center for Educational Statistics is the main data source of the study. The data set included a nationally representative sample of 1,037 public school principals. Findings: the findings of the study indicated that six of the ten facility conditions are statically and positively associated with the delivery of instruction. These six facility conditions significantly predicted the delivery of instruction after controlling other extraneous or plausible variables. Facility conditions accounted for 43 percent of the explained variation on the delivery of instruction with a medium-sized effect. Social Implications: Because of its service-oriented nature, the human factor has long been the primary focus of educational research. Organizational settings, where worker function and interact, and the behavior have attracted little attention among educational researchers. The findings of this study provided much- needed evidence to educators, policymakers, and legislators who are in dire need of research-based guidance on the effects of school facilities. The paper supported the notion that educational facilities do matter and they affect the delivery of instruction. The findings of the study may also have implications to other fields (i.e. health, business, and manufacturing) in regard to the effects of facility conditions on the effectiveness of personal at any workplace. Value:

this paper contributes to the field by offering a nationwide perspective of school principals on the effects of school facilities on teaching.

Damanik (2014) conducted a research which took place during nationwide educational reform efforts in Indonesia. The overarching aim was to investigate whether relationships exist between the principal's leadership style, elements of the school climate (considered important for school improvement) and teachers' self-efficacy. Data collected from a sample of 604 teachers from 27 high schools were used to test the hypothesized model using structural equation modeling. The results indicated statistically significant and positive relationships between the three main variables.

Thus, from these reviews, it is concluded that in Jammu city no major research has been done on Principal- Teacher Interaction. That's why the PIQ tool is being used in Jammu city cbse schools to add to richness of the research literature.

2.7 CHAPTER SUMMARY

This chapter highlights the research studies done in various countries regarding the interpersonal behavior in an educational field. The review of literature on the QTI reveals that it is an instrument of historical importance and right from its inception it has been used successfully in assessing the teacher student interaction. Also the review of literature on the PIQ shows the perception of teachers about the school principal. It reflects the principals' interpersonal behavior. This questionnaire has been used in a number of countries and has proven to be highly reliable and valid for use in future research. The review on the principal teacher relationships show that how the principal behaves and react with the teachers. The present study helps in assessing the interpersonal behavior between school principals and teachers. It has been developed to assist teachers assess their own styles in their schools. It has been shown to be a reliable and efficient way of gaining information. This chapter provides the theoretical basis for this study. The next chapter describes the research methodology used in the present study with detailed information on the research objectives, design of the study, the sample, the instruments used in the study and the methods of data collection and analysis.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methods are of utmost importance in a research process. They indicate the various steps in the plan of attack to be adopted for solving a research problem. It is, therefore, very important that researchers have a thorough understanding of diverse research methods- their strengths, limitations, applications and appropriateness. The term methodology is sometimes applied to the methods and techniques used by social researchers, the methodological aspects of a study more accurately refer to the philosophy of science embedded within these methods and within the researcher's approach to data collection and analysis (Pole & Lampard, 2002).

Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. In fact, research is an art of scientific investigation. We all possess the vital instinct of inquisitiveness for, when the unknown confronts us, we wonder and our inquisitiveness make us probe and attain full and fuller understanding of the unknown. This inquisitiveness is the mother of all knowledge and the method, which man employs for obtaining the knowledge of whatever the unknown, can be termed as research. Research is an academic activity and as such the term should be used in a technical sense. It is the pursuit of truth with the help of study, observation, comparison and experiment. In short, the search for knowledge through objectives and systematic method of finding solution to a problem in research. The systematic approach concerning generalization and the formulation of a theory is also research. As such the term 'research' refers to the systematic method consisting of enunciating the problem, formulating a hypothesis, collecting the facts or data, analyzing the facts and reaching certain conclusions either in the form of solutions(s) towards the concerned problem or in certain generalizations for some theoretical (Yadav, 2012).

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. It is necessary for the researcher to know not only the research methods/techniques but also the methodology. Researchers not only need to know how to develop certain indices or tests, how to calculate the mean, the mode, the median or the standard deviation or chi-square, how to apply particular research techniques, but they also need to know which of these methods or techniques, are relevant and which are not, and what would they mean and indicate and why. Researchers also need to understand the assumptions underlying various techniques and they need to know the criteria by which they can decide that certain techniques and procedures will be applicable to certain problems and others will not. All this means that it is necessary for the researcher to design his methodology for his problem as the same may differ from problem to problem. For example, an architect, who design a building, has to consciously evaluate the basis of his decision, i.e., he has to evaluate why and on what basis he selects particular size, number and location of doors, windows and ventilators, uses particular materials and not others and the like. Similarly, in research the scientist has to expose the research decision to evaluation before they are implemented. He has to specify very clearly and precisely what decisions he selects and why he selects them so that they can be evaluated by others also. From what has been stated above, we can say that research methodology has many dimensions and research methods to constitute a part of the research methodology.

The proper direction in any research work yield positive and meaningful results. The direction determined by the research methodologies and strategies, the investigator has adopted for completing the task. This chapter provides the information about sample, which has been the basis of research and provides a picture of the instrument used, collection and procedure employed tabulation of data and statistical used. This chapter shows the detail of the procedure following in conducting the piece of research. In addition to this, it also provides a picture of instrument employed for the analysis of data. Each study possesses its own problem and size of the sample varies from study to study.

A research design describes in detail the methodology adopted for the study, the nature and the size of the sample and the sampling techniques used in selecting the sample, the tool used and the process of preparation of the tools, the data collection process and the techniques of data analysis. In other words, it provides blueprint of the research.

3.2 RESEARCH OBJECTIVES

The objectives of the proposed research study are:

1. To study the interpersonal behavior of principals in selected CBSE schools of Jammu city.
2. To investigate the gender differences in teachers' perceptions about their principal.
3. To compare the teachers' perceptions about their principal in different CBSE schools in Jammu.
4. To compare the teachers' perceptions about their principal based on their level of appointment.

3.3 DESIGN OF THE STUDY

3.3.1 Sample for the study

The sample covered teachers from 3 CBSE schools of Jammu city. The sample was chosen carefully so as to be representative of the population and comprises of both male and female teachers in order to obtain an unbiased test of gender differences. The sample has been included 60 teachers (both males and females) thereby taking 20 teachers from each CBSE schools from different levels of appointment (Primary, Middle and Secondary).

3.3.2 Research Instrument selection

An assumption underlying this study is that the theory underpinning the Questionnaire on Teacher Interaction to measure a teacher's interpersonal behavior with students could

also hold true for measuring a principal's interpersonal style with teachers. In order to investigate the principal's interaction style with teachers a questionnaire was developed.

This had been done, firstly, by Kremer-Hayon and Wubbels (1993, p. 113), who described the development of the Questionnaire on Principal Interaction (PIQ) from the questionnaire on teacher interaction. The original Dutch and American versions were translated into Hebrew. Some of the scales were also changed-for example student Responsibility and Freedom became giving teacher responsibility and Freedom, admonishing behavior became objecting. A 62 item questionnaire was the result and responses from 96 teachers in Israel, were correlated with a measure of teacher satisfaction. A similar process was used in this study. The principal interaction questionnaire (PIQ) was developed from the 48-item version of the QTI. The final version of the PIQ is composed of six items for each of the eight scales of interpersonal behavior. Possible responses for each item are Never, Rarely, Sometimes, Often and Always. A copy of the principal interaction questionnaire (PIQ) is attached in Appendix A. The various scales of the PIQ and their brief description as used in the study are given in table.

Table 3.1

Description of scales in the Principal Interaction Questionnaire (PIQ).

Scale Name	Description of associated behavior	Sample item	Leary's category
Directive Behavior	Notice what's happening, lead, organize, give orders, set tasks, determines procedure, explain, and hold attention give directions.	This principal gives clear directions.	DC-Dominant cooperative
Encouraging Behavior	Assist, shows interest, join, behave in a friendly manner, able to make a joke, inspire confidence and trust.	This principal takes a personal interest in teachers.	CD-Cooperative Dominant

Understanding Behavior	Listen with interest, empathies, show confidence and understanding, accept apologies, looks for ways to settle differences, be patient, and be open with teachers.	If teachers have something to say, this principal will listen.	CS-Cooperative Submissive
Giving teachers Independence behavior	Give teachers opportunity to work independently, allow teachers time for professional development, and give freedom to choose teaching methods.	This principal gives teachers the opportunity to develop their own courses.	SC-Submissive Cooperative
Uncertain Behavior	Keep a low profile, hesitant, timid, not sure what to do.	This principal changes his/her mind.	SO-Submissive Opposing
Disapproving Behavior	Think teachers are not giving their best, criticize, question, suspicious.	This principal puts teachers down.	OS-Opposing Dominant
Aggressive Behavior	Get angry, look down on the teachers, express irritation, punish.	This principal is impatient with the teachers at this school.	OD-Opposing Dominant
Strict Behavior	Keeps rein tight, check, judge, strict adherence to rules and regulations, inflexible.	This principal keeps a tight rein on teachers' activities at school.	DO-Dominant Opposing

3.4 DATA COLLECTION

After making requisite preparations for the study and selection of the instruments for the purpose of assessment, the process of data was initiated. The data collected for the study was quantitative in nature. The quantitative data were collected by administering the PIQ questionnaire. Principal Interaction Questionnaire (Kremer-Hayon and Wubbels, 1993, p.113) is the tool that was used to study the interpersonal behavior with the teachers. When the PIQ is administered to teachers, information is provided about the perceptions of their principals' interpersonal behavior. The data was collected from 3 CBSE school of Jammu city. Firstly, permission was taken from the principal of different schools. After getting the permission, the data will be collected by distributing the PIQ Questionnaire to the teachers of different schools. Instructions were given to the teachers on how to score the five-point rating scale of PIQ. The teachers who found difficulty to understand any question, were explained the same properly so that correct data could be collected.

3.5 DATA ANALYSIS

The data collected after administering the PIQ Questionnaire will be first tabulated and coded in an excel file. The data will be then statistically analyzed using SPSS version 14. Data will be analyzed by using descriptive statistics such as means, standard deviations, t-test and ANOVA. The statistically tools were selected from the point of view of achieving the research objectives proposed for the study.

The first research question aimed to study the interpersonal behavior of principals in selected CBSE schools of Jammu city. In order to carry out this investigation mean, standard deviations and correlation were computed.

The second objective aimed to investigate the gender differences in teachers' perceptions about their principal. The investigation will carry by independent sample t- test.

The third and fourth objectives aimed to compare the teacher's perceptions about their principal in different CBSE school of Jammu city and this was calculated with the help of ANOVA.

3.6 CHAPTER SUMMARY

This chapter gives detailed information on the research methodology used in the study which was quantitative and qualitative in nature. A questionnaire survey method was used to collect information using one tool of measurement, the Principal Interaction Questionnaire (PIQ). The process of data collection included the sampling for the study; the choice of CBSE schools and the instrument used in the study have been discussed in this chapter. Finally, the process of data analysis is described which includes the statistical tools for achieving the objectives of the study.

CHAPTER 4

RESULT OF THE STUDY

4.1 INTRODUCTION

Analysis of data means categorizing, ordering, manipulating and summarizing the data to obtain answer to the research questions (Kerlinger, 1986). The purpose of analysis is to reduce data into intelligible and interpretable form so that meaningful results can be arrived at. Analysis of the data can be done in the light of the objectives of the study.

The most important step in any research project is the analysis and interpretation of the data collected. After the data has been collected and tabulated, it must be processed and analyzed properly, so as to draw proper inference. Analysis of data means the study of tabulated material in order to determine inherent facts of meanings. A systematic and scientific treatment of the tabulated data is essential for drawing valid conclusions. It involves breaking up of complex factors into simpler parts and putting them in new arrangement for the purpose of interpretation.

Collection of data has no meaning unless it is tackled properly, analyzed and interpreted by sophisticated techniques. Analysis is an important phase of the classification and summarization of data. So the interpretation is considered as one of the most important step in the total procedure of research.

The present chapter describes the results from the quantitative analysis of data obtained through the questionnaire PIQ which measures the perceptions of teachers towards their principals'. The quantitative analysis in this chapter will seek to achieve the research objectives.

4.2 VALIDATION OF THE PIQ

The teacher's form of the Principal Interaction Questionnaire (PIQ) was administered to 60 teachers, at primary, middle and secondary level three CBSE schools of Jammu city, to assess the teachers' perceptions of their interpersonal relationship with their principal.

The cronbach alpha reliability coefficient was used as an index of scale internal consistency indicating the consistency of the test items relative to other test items which are designed to measure the same construct of interest. A coefficient of 0.00 indicates a complete absence of a relationship, whereas 1.00 is the maximum possible coefficient that can be obtained (Fraenkel&Wallen, 2000). The Circumplex Model confirms the validity of PIQ for using teachers in assessing their perceptions about their principal.

A further analysis was also carried out to explore the inter-scale correlations between the different scales of the PIQ. The PIQ is based on a circumplex model in which the scales are arranged to form a circular pattern of the eight dimensions of interpersonal behaviour and they are expected to be correlated.

The Model of the Interpersonal Behaviour (Wubbels& Levy, 1993) as explained in chapter 2, predicts that the correlations between two adjacent scales are highest, but are negatively correlated. This pattern is reflected in Table 4.1 where the results of the inter-scale correlations from the study generally reflect the circumplex nature of the PIQ.

Table 4.1
Inter Scale Correlations for the Principal Interaction Questionnaire PIQ Actual Form.

	DIR	ENC	UND	GI	UNC	DIS	AGG	STR
Directive		0.73**	-0.37**	-0.47	0.32*	0.14	-0.36	-0.21
Encouraging			-0.35**	-0.32*	0.37**	0.18	0.50**	-0.25
Understanding				0.66**	0.38	0.17	0.45**	0.32*
Giving Independence					0.22	0.20	0.39**	0.31*
Uncertain						0.36**	-0.05	-0.03
Disapproving							-0.08	-0.13
Aggressive								0.44**
Strict (DO)								

**significant at $p < 0.01$, *significant at $p < 0.05$, $n = 60$

Table 4.1 illustrate the inter scale correlation between the eight scales of PIQ. It is evident from table that some of the scales are positively correlated whereas some are negatively correlated with each other. Some of the scale are significant while others are not significant. This shows that scale of PIQ are generally in harmony with each other and will contribute to the study of perceptions of teachers about their school principals in CBSE affiliated school of Jammu city.

Based on the above data, figure 4.1 illustrates the circumplex model, as it relates to the Encouraging scale.

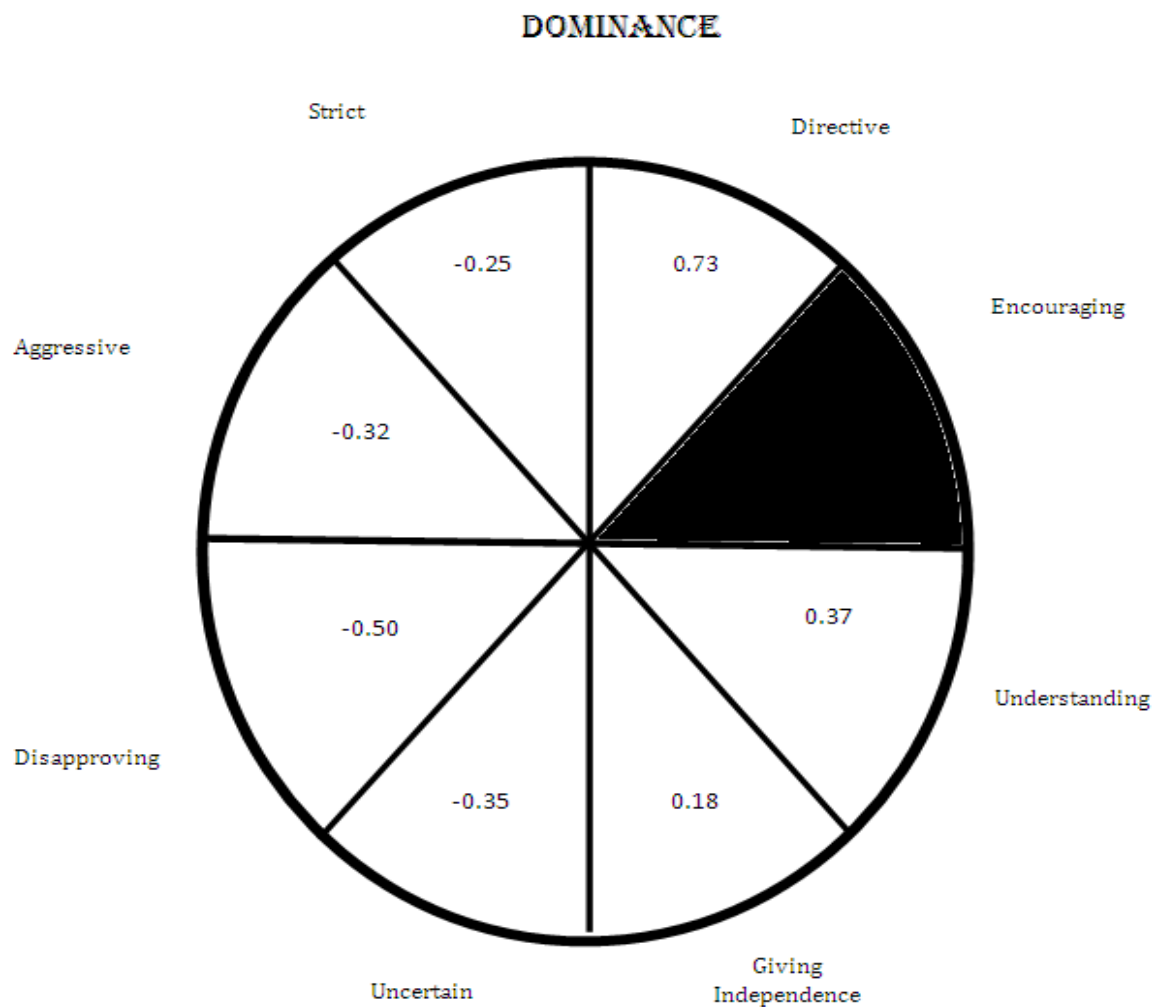


Figure 4.1. Correlation of Encouraging Scale with other PIQ scales showing the circumplex model.

The Encouraging scale is highly correlated to its neighboring scales, Directive which has a correlation of 0.73 and 0.37 with the Understanding. The correlation becomes lower with the next scale Giving Independence which is correlated with the score of 0.18. The minimum correlation is with the opposite scale of Encouraging. Generally, the findings in this study support the circumplex model of PIQ and hence validate it for use in schools assessing interpersonal behavior.

Table 4.2

Internal Consistency Reliability (Cronbach Alpha Coefficient) for the PIQ.

Scale Name	No. of Items	Alpha Reliability	
		Actual	Ideal
Directive	6	0.89	0.85
Encouraging	6	0.74	0.74
Understanding	6	0.66	0.66
Giving Independence	6	0.54	0.69
Uncertain	6	0.58	0.51
Disapproving	6	0.58	0.69
Aggressive	6	0.75	0.75
Strict	6	0.57	0.57

Table 4.2 represented the statistical data for the PIQ. The alpha reliability coefficients for the different scales of PIQ range from 0.51 for the Uncertain scale to 0.85 for the Directive scale. For the scales of Encouraging, Understanding, Giving Independence, Disapproving, Aggressive, and Strict, the alpha reliability coefficients were 0.74, 0.66, 0.54, 0.58, 0.75, and 0.57. The reliability results of the PIQ were consistently above 0.50. This suggested that (PIQ) could be used as a reliable tool (De Vellis, 1991) for assessing the principal teacher interaction at primary, middle and secondary levels.

4.3 MEANS AND STANDARD DEVIATIONS OF THE PIQ

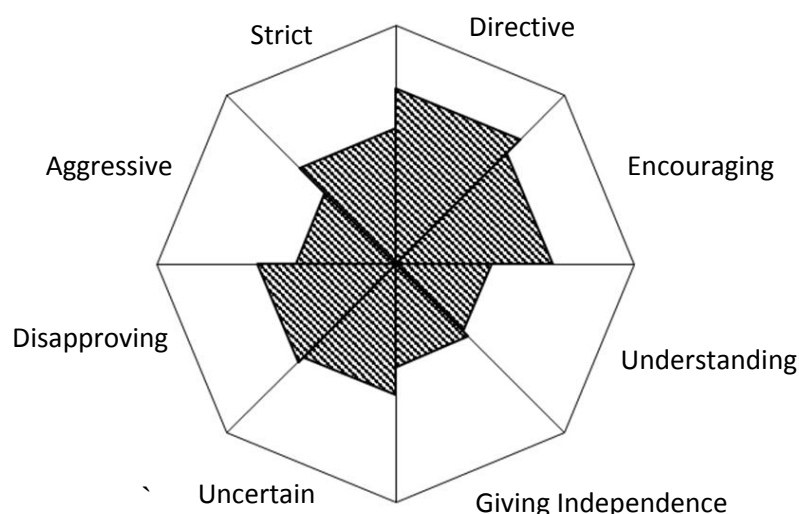
The data for the descriptive statistics concerning PIQ were collected from 60 teachers in 3 CBSE schools of Jammu city at primary, middle and secondary level. The value of means and standard deviations are given in Table 4.3. The highest mean value is 4.46 for the Directive scale and the least value is 2.40 for the Aggressive scale.

Table 4.3

Means, Standard Deviations (SD) and Significance of Difference between Means (t) for the PIQ.

Scale Name	No. of Items	Mean		Standard Deviation(SD)		t
		Actual	Ideal	Actual	Ideal	
Directive	6	4.46	4.45	0.74	0.75	1.85
Encouraging	6	3.99	4.12	0.74	0.73	1.41
Understanding	6	2.45	2.55	0.75	0.83	1.15
Giving Independence	6	2.62	2.71	0.71	0.90	0.81
Uncertain	6	3.35	3.39	0.64	0.67	0.47
Disapproving	6	3.50	3.39	0.66	0.76	1.13
Aggressive	6	2.55	2.40	0.86	0.79	1.67
Strict	6	3.19	3.13	0.73	0.71	0.79
n = 60						

The overall analysis of the above results show that the teachers see their Principals as encouraging most of the time of have also related their Principals in terms of giving clear directions, giving freedom and in understanding them, showing disapproving and aggressive behavior in the school. Teachers feel that their Principal gives less independence to them. Figure 4.2 represents a sector profile depicting teachers' perceptions of the principal-teacher interpersonal behaviour in schools which was developed by plotting the mean scores of the eight scales of the PIQ in an excel worksheet. The sector profile reveals diagrammatically the degree to which teachers perceive each behavioural aspect exhibited by the principal as measured through the PIQ.



4.2 Sector Profile Diagram of Teachers, perception of their Principals' interpersonal behaviour.

From Table 4.3 we can see that the Standard deviation ranges from 0.64 for Uncertain the scale to 0.90 for the Giving Independence scale. Since the value of the Standard deviation are less than 1.00, it suggests that there is no major diversity in teachers' perceptions.

4.4 GENDER DIFFERENCES

4.4.1 Introduction

To investigate whether gender differences occur in teachers' perceptions about their principal, data was collected from 60 teachers of 3 CBSE schools. In the present sample 60 teachers taken from primary, middle and secondary classes, there were 12 male teacher and 48 female teachers. In this section, the gender differences with respect to Principal-Teacher Interaction have been discussed.

4.4.2 Gender Differences and Perceptions of Principal-Teacher Interactions

The means and standard deviations for two groups were computed followed by a test of significance of difference between means (t-test for independent samples), to find out if there were any gender differences on the eight scales of the PIQ. The data obtained statistically are presented in Table 4.4

Table 4.4

Means, Standard Deviations and Significance of Difference between Means for Gender Differences in Teachers' Perceptions of Principal Teacher Interaction as measured by the PIQ Scale.

Scale	Gender	Mean	Mean Difference (M-F)	Standard Deviation	<i>t</i>
Directive	Males	4.54	0.22	0.45	0.94
	Females	4.57		0.79	
Encouraging	Males	4.33	0.43	0.47	1.83
	Females	3.90		0.78	
Understanding	Males	2.03	-0.53	0.58	2.29**
	Females	2.56		0.75	
Giving Independence	Males	2.51	-0.14	0.45	0.59
	Females	2.65		0.76	
Uncertain	Males	3.24	-0.14	0.39	0.70
	Females	3.38		0.69	
Disapproving	Males	3.22	-0.35	0.73	1.67
	Females	3.57		0.63	
Aggressive	Males	2.47	-0.11	0.99	0.37
	Females	2.58		0.84	
Strict	Males	3.18	-0.02	0.68	0.09
	Females	3.20		0.75	

Males: n=12 Females: n=48

The Data analysis reveals that there are gender differences in teachers' perceptions of their interaction with the principal in CBSE schools. The difference is between male and female teachers on the scales of Understanding. Understanding is statistically significant at 0.01 and 0.05 level with a t-value 2.29. Thus, male teachers feel that principal is more Understanding towards them. It means principal listen with interest, empathies, show confidence and understanding, accept apologies, looks for ways to settle differences, be patient, and be open with teachers. Figure 4.3 represents the mean scores of the male and female students on the eight scales of the PIQ.

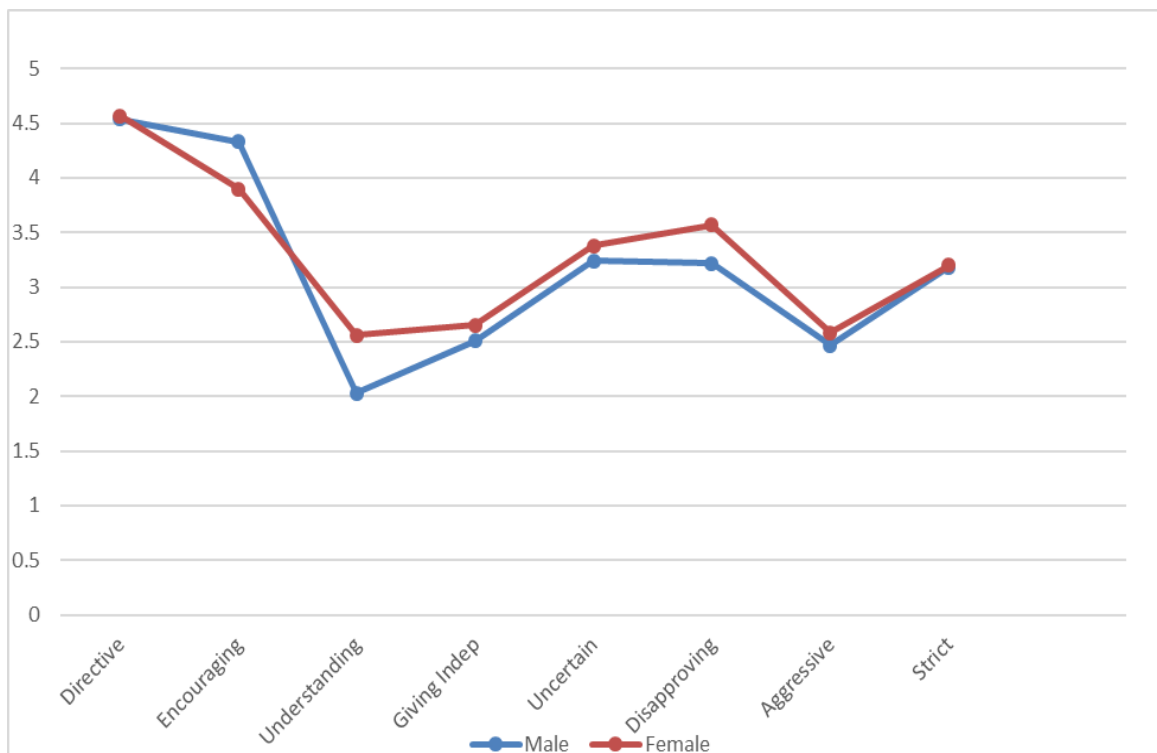


Figure 4.3. Mean scores of male and female teachers on the eight scales of PIQ.

4.5 COMPARISON OF TEACHERS PERCEPTIONS ABOUT THEIR PRINCIPALS IN DIFFERENT SCHOOLS

The major focus of the study was to investigate the teacher's perceptions about their principal based on their level of Appointment. Their comparison is calculated by one-way ANOVA. The teachers are appointed in schools on different levels i.e. primary, middle and secondary. The data is analyzed statistically and is presented in Table 4.6.

Table 4.6

Means, Standard Deviations and F-value for Teacher's Perceptions about Principal on Different Levels in Schools.

Scale	Levels	Mean	Standard Deviation	F
Directive	Primary	4.55	0.38	0.02
	middle	4.60	0.93	
	Secondary	4.59	0.84	
Encouraging	Primary	3.80	0.66	1.57
	Middle	3.96	0.77	
	Secondary	4.21	0.77	
Understanding	Primary	2.96	0.53	10.34**
	Middle	2.37	0.69	
	Secondary	2.03	0.71	
Giving Independence	Primary	2.95	0.54	3.57**
	Middle	2.51	0.88	
	Secondary	2.41	0.58	
Uncertain	Primary	3.47	0.65	3.03**
	Middle	3.07	0.58	
	Secondary	3.52	0.63	
Disapproving	Primary	3.62	0.44	0.98
	Middle	3.54	0.53	
	Secondary	3.34	0.91	
Aggressive	Primary	2.88	0.76	3.21**
	Middle	2.57	0.78	
	Secondary	2.55	0.94	
Strict	Primary	3.38	0.71	1.91
	Middle	3.26	0.68	
	Secondary	2.95	0.77	

From the above data analysis, we can see that there is a significant difference in teacher's perception about their principal based on their level of appointment. The primary teachers show that their principal is highly understanding, Giving Independence and also shows Aggressive behaviour. It means that their principal listens with interest, is patient, is open with teachers, give teachers opportunity to work independently, gives freedom to choose teaching methods and value 2.88 for Aggressive scale principal gets angry and look down on the teachers. The secondary school teachers show that their principal have uncertainty in their nature. It means that their principal is uncertain and that they keep a low profile, are hesitant, timid, and not sure what to do.

4.7 CHAPTER SUMMERY

The results from the quantitative analysis of data are presented in this chapter. The Principal Interaction Questionnaire has been developed to assist principals assess their own styles in their CBSE schools and to see the effect on the school environment. It has been shown to be reliable and efficient way of gaining information. This chapter reports on assessing the principal-teacher interaction at the primary, middle and secondary schools. The study revealed that there were many significant relationships between the principal's interpersonal behavior with teachers and the teachers' perception. This chapter has presented the descriptive statistics using PIQ tool and the teachers' perception of their principals' interpersonal behavior using the PIQ in term of their means and standard deviations. The result shows that the teachers perceive their principals and interactions in a positive and a significant manner. Results on investigation of gender differences suggest that there exists a gender difference in assessing interpersonal behavior between principal-teacher interactions as measured by the PIQ.

CHAPTER 5

CONCLUSIONS

5.1 INTRODUCTION

The methodology of the study can be described as being quantitative in nature in which the questionnaire method has been extensively employed and the use of inferential statistics has been made to deduce results. The sample for the study is consisted of 60 teachers from 3 CBSE schools of Jammu city. To assess the interpersonal behavior of principals used in the study was established and gender differences were also studied in the school by using PIQ tool.

5.2 MAJOR FINDINGS OF THE STUDY

The major findings of the present study are reported in the following sub sections.

5.2.1 Research Objective 1

To Study the Interpersonal Behavior of Principals in Selected CBSE Schools of Jammu City.

Item means and standard deviations were computed to determine the nature of the CBSE schools using the PIQ. The data for the descriptive statistics concerning PIQ were collected from 60 teachers in primary, middle and secondary levels. The values of the mean and standard deviation of the eight scales of the PIQ, depicts the highest mean value was 4.57 for the Directive scale and the least value was 2.03 for the Understanding scale. The mean value was 3.99 for the Encouraging scale, 2.62 for the Giving Independence scale, 3.35 for the Uncertain scale, 3.50 for the Disapproving scale, 2.55 for the Aggressive scale, 3.19 for the Strict scale. The values of the Standard Deviations for the questionnaire are less than 1.00 and it indicates that there is no major diversity in Principal Teacher Interaction.

The overall analysis of the above results shows that the teachers see their Principals as Leadership and a good motivator most of the time and have also rated their Principals in terms of giving clear directions, giving freedom and understands them, changes his/her mind, inflexible behavior, disapproving and aggressive behavior in the school. The negative aspects of the Principal-Teacher Interaction have been rated quite low by the teachers as principals seldom Uncertain, are less Dissatisfaction and less Admonishing.

5.2.2 Research Objective 2

To Investigate the Gender Differences in Teachers' Perceptions About their Principal.

For the fulfillment of the second objectives of the research study, the sample was first divided as per male and female teachers. In the total sample of 60 teachers there were 12 male teachers and 48 female teachers.

The mean and standard deviations for each of the male and female groups were computed followed by a test of significance of difference between means (t-test for independent samples) on the eight scales of the PIQ. The eight scales of the PIQ only one scale, i.e. Uncertain with a t-value of 2.29 were statistically significant ($p < 0.05$ and $p < 0.01$). In the Uncertain scale which are statistically significant, males have a higher mean score than females. This means that male teachers think that their Principals give more independence and opportunities to the teachers and are inflexible in behavior i.e. keeps a tight rein, checks, judges and strict adherence to rules and regulations on teachers. Other seven scales, i.e. Leadership with a t-value 0.94, Understanding with a t-value 1.83, Admonishing with a t-value 0.59, Helpful/Friendly with a t-value 0.70, Giving Responsibility with a t-value 1.67, Dissatisfaction with a t-value 0.37 and Strict with a t-value 0.09 are not statistically significant.

The data analysis reveals that there are gender differences in teachers' perceptions of their principal-teacher interactions in schools. However, the difference between male and female teachers in Uncertain is statistically significant at 0.01 and 0.05 levels with a t-

value of 2.29. Thus, male teachers feel that principals gave more uncertain to their teachers as compared to female teachers.

5.2.3 Research Objective 3

To Compare the Teachers' Perceptions About their Principal in Different CBSE Schools of Jammu city.

The means and standard deviations for the different schools were computed along with ANOVA, to find out the difference in perceptions of teachers about their Principals in different CBSE schools.

The data analysis reveals that there are significant differences between the perceptions of schools on their PIQ scale. The school perceptions about their principal is compared with the help of ANOVA. There are significant differences on all the scales of the PIQ. The teachers of school 1 believe that their principal has Understanding behaviour because its mean is maximum as compared to other schools. They highly feel that their principal listens with interest, empathies, shows confidence and understanding, accepts apologies, and looks for ways to settle differences, be patient and be open with teachers.

5.2.4 Research Objective 4

To Compare the Teachers' Perceptions About their Principal Based on their Levels of Appointment.

The third objective's focus was to investigate the teachers' perceptions about their principal based on their level of appointment. Their comparison is calculated by one-way ANOVA. The teachers are appointed in schools on different levels i.e. primary, middle and secondary.

There is a significant difference in teacher's perception about their principal based on their level of appointment. The primary school teachers show that their principal is highly Understanding, Giving Independence, and Aggressive. It means that their principal listen with interest, empathies, shows confidence and understanding, accepts apologies, give

teacher opportunity to work independently, give freedom to choose teaching methods, looks down on the teachers, expresses irritation, punishes. The secondary school teachers show that their principal is uncertain in nature because their mean are higher than other means. The secondary level teachers believe that their principal keeps a low profile, hesitant, timid, not sure what to do.

5.3 IMPLICATIONS

The results of the present study in the context of research in the field of Principal-Teacher Interactions in CBSE school of Jammu city are considerable mainly because it is one of the final studies to use the teacher version of Questionnaires on Principal Interaction (PIQ) at the primary, middle and secondary levels in India. The results have shown that PIQ can be considered a reliable and a valid tool. Thus it indicates that PIQ can be used with confidence to study the principal teacher interactions in school environment.

The study is significant because the outcomes can provide guidelines for policy makers and principals to improve interpersonal behavior with them. However, the findings of this study in terms of principal-teacher interaction provides valuable feedback for the principals to look at how they can modify their behavior towards teachers in the school and what areas they need to work on to make the school environment more effective. The result shows that there are significant gender differences in teachers' perception of their principal-teacher interactions in schools. Also, the result shows that the teachers see their principals as encouraging most of the time and have also rated their principals in terms of Giving clear directions, giving freedom and in Understanding them. The findings of this study are usually useful for improving principal-teacher interactions as it presents as to what kind of behavior teachers like their principals to exhibit in school which may lead to the development of a good atmosphere in schools.

5.4 SUGGESTIONS FOR FUTURE RESEARCH

Future research could be undertaken using the PIQ to investigate further the nature of principals' interpersonal behavior in schools. The present research is the first of its kind to study the interpersonal behavior of school principals based on the perception of

teachers. The results obtained from the study credibly bring out the value of the principal-teacher interactions at the primary, middle and secondary level. However, the investigator is convinced that much work remains to be done in order to fully understand the interaction behavior between principals and teachers. It is therefore important that future research studies should be directed to tap this productive area for improving the state of principal-teacher interactions in different levels. The following suggestions may be incorporated by researchers working in the area of assessing principal teacher interactions in school and bring about meaningful changes that would enrich positive perception of teachers towards their principal.

It would be desirable replicating the present study involving larger and including teachers from different schools as a sample of 60 teachers was taken in present study. This would help in further establishing the reliability and validity of the principal-teacher interaction. On the basis of results from these studies, it would be possible to provide valuable inputs to managements of various primary, middle and secondary level institutions to take necessary step for promoting principal-teacher interactions in a positive manner at primary, middle and secondary level of Education.

The investigator feels that there is still great possibility for future research in the adaption and translation of the PIQ and other principal-teacher interactions instruments into various Indian languages. This would go a long way in providing wider coverage of these instruments and contribute to the richness of the data collected in different schools.

Another important direction which emerges from this study is to have research studies conducted with the principal-teacher interactions in different collages/universities, thereby enlarging its scope to cover varied target groups with different learning needs in diverse educational environments.

5.5 CONCLUSIONS

A major contribution of the present study is the validation of a widely applicable and distinctive questionnaire (PIQ) for assessing interpersonal behavior in 3 CBSE primary, middle and secondary level schools of Jammu city. The reliability and the validity of the PIQ was established in primary, middle and secondary level schools. The PIQ create a

healthy interaction with the teachers which improves principal-teacher interaction. The results obtained from the study credibly bring out the value of the principal-teacher interactions in primary, middle and secondary level. There are significant gender differences in teachers' perceptions of their principal-teacher interactions in schools. There are significant differences between the perceptions of teachers in different schools. Finally, the result report on the significant differences in principal teacher interaction in selected CBSE schools of Jammu city. These result shows that the research objectives of the study have been achieved. The findings of this research can be broadly applied to the study of the principal-teacher interaction.

SUMMARY

TOPIC

“A COMPARATIVE STUDY OF THE PERCEPTIONS OF TEACHERS ABOUT THEIR SCHOOL PRINCIPALS IN CBSE AFFILIATED SCHOOLS OF JAMMU CITY.”

Supervisor

Dr. Adit Gupta

Investigator

Asya Kousar

THE PROBLEM

As a researcher, I have observed difficulty in my dissertation that some schools don't allow me to go inside the school premises for filling the Questionnaire. Also teachers felt afraid in filling the Questionnaire because they thought that their information about their principal behavior can be leaked. In this research I have made an attempt to study the learning environment at the primary, middle and secondary level CBSE schools of Jammu city. For this data was collected from 60 teachers of different level schools. To assess the principal-teacher interactions in selected CBSE schools, a teacher version of Questionnaire on Principal Interaction was administered.

RESEARCH OBJECTIVES

The objectives of the proposed research study are:

- a. To study the interpersonal behavior of principals in selected CBSE schools of Jammu city.
- b. To investigate the gender differences in teachers' perceptions about their principal.
- c. To compare the teachers' perceptions about their principal in different CBSE schools in Jammu.
- d. To compare the teachers' perceptions about their principal based on their level of appointment.

SAMPLE

The sample covered the teachers from 3 CBSE schools of Jammu city. The sample was chosen carefully so as to be representative of the population and comprises of both male and female teachers in order to obtain an unbiased test of gender differences. The sample will involve about 60 teachers (both males and females) thereby taking 20 teachers from each CBSE schools.

TOOL USED

The process of data collection for the present research study was done using questionnaire on principal interaction. Kremer-Hayon and Wubbles (1993) who described the development of the Questionnaire on Principal Interaction (PIQ) from the Questionnaire on Teacher Interaction. When the PIQ is administered to primary, middle and secondary level, information is provided about the principal teacher interaction and the perception of teachers towards their principal.

RESULTS OF THE STUDY

Two indices for the scale reliability and validity were generated for the scale reliability and validity were generated. As an index of scale internal consistency including the consistency of the test items relative to other test items which are designed to measure the same construct of interest, the Cronbach alpha reliability coefficient was used. A coefficient of 0.00 indicates a complete absence of a relationship, whereas 1.00 is the maximum possible coefficient that can be obtained (Fraenkel & Wallen, 2000). A discriminant validity index (namely, the mean correlation of a scale with other scales) was used as evidence that each TTPAQ scale measures a separate dimension that is distinct from the other scales in this questionnaire. To find out the association between PIQ Mean, Standard Deviation, t-Test, and Correlation were used.

The alpha reliability coefficients for the different scales of PIQ range from 0.51 for the Uncertain scale to 0.85 for the Directive scale. For the scales of Encouraging, Understanding, Giving Independence, Disapproving, Aggressive, and Strict, the alpha reliability coefficients were 0.74, 0.66, 0.54, 0.58, 0.75, and 0.57. The reliability results

of the PIQ were consistently above 0.05. This suggested that (PIQ) could be used as a reliable tool (De Vellis, 1991) for assessing the principal teacher interaction at primary, middle and secondary levels. To assess the principal interpersonal behaviour in schools we have computed the value of means and standard deviations. The values of the mean and standard deviation of the eight scales of the PIQ, depicts the highest mean value was 4.57 for the Directive scale and the least value was 2.03 for the Understanding scale. The mean value was 3.99 for the Encouraging scale, 2.62 for the Giving Independence scale, 3.35 for the Uncertain scale, 3.50 for the Disapproving scale, 2.55 for the Aggressive scale, 3.19 for the Strict scale. The values of the Standard Deviations for the questionnaire are less than 1.00 and it indicates that there is no major diversity in Principal Teacher Interaction.

In order to investigate gender, exist teacher perception about their principal t-test was computed. The result show that means and standard deviations for each of the male and female groups were computed followed by a test of significance of difference between means (t-test for independent samples) on the eight scales of the PIQ. The Data analysis reveals that there are gender differences in teachers' perceptions of their interaction with the principal in CBSE schools. The difference is between male and female teachers on the scales of Understanding. Understanding is statistically significant at 0.01 and 0.05 level with a t-value 2.29. Thus, male teachers feel that principal is more Understanding to them.

In order to investigate that there is a significant difference in teacher's perception about their principal based on their level of appointment. The primary teachers show that their principal is highly understanding, Giving Independence and also shown Aggressive behaviour. It means that their principal listens with interest, is patient, is open with teachers, give teachers opportunity to work independently, gives freedom to choose teaching methods and value 2.88 for Aggressive scale principal gets angry and look down on the teachers. The secondary school teachers show that their principal have uncertainty in the nature of their principal because their mean is higher than other level teachers. It means that their principal is uncertain and that they keep a low profile, are hesitant, timid, and not sure what to do.

DELIMITATIONS OF THE STUDY

This research was mainly concerned with accessing the behavior of CBSE school principals and the principal-teacher interactions in such CBSE schools. Since this study required teachers of different levels to observe principal's behavior the study was limited to only primary, middle and secondary CBSE schools of Jammu city. Also this study was confined to only 60 teachers of CBSE schools for collecting data and assessing the interpersonal behavior of CBSE school principals. This study was limited to those CBSE schools and teachers from the randomly selected sample who participated.

A limited time was available for collecting data from CBSE schools else the study could have been done on a large scale. Due to paucity of time, the present study is only quantitative in nature; whereas using qualitative analysis could have enhanced the results.

SUGGESTIONS FOR FUTURE RESEARCH

Future research could be undertaken using the PIQ to investigate further the nature of principals' interpersonal behavior in schools. The present research is the first of its kind to study the interpersonal behavior of school principals based on the perception of teachers. The results obtained from the study credibly bring out the value of the principal-teacher interactions at the primary, middle and secondary level. However, the investigator is convinced that much work remains to be done in order to fully understand the interaction behavior between principals and teachers. It is therefore important that future research studies should be directed to tap this productive area for improving the state of principal-teacher interactions in different levels. The following suggestions may be incorporated by researchers working in the area of assessing principal teacher interactions in school and bring about meaningful changes that would enrich positive perception of teachers towards their principal.

It would be desirable replicating the present study involving larger and including teachers from different schools as a sample of 60 teachers was taken in present study. This would help in further establishing the reliability and validity of the principal-teacher interaction.

On the basis of results from these studies, it would be possible to provide valuable inputs to managements of various primary, middle and secondary level institutions to take necessary step for promoting principal-teacher interactions in a positive manner at primary, middle and secondary level of Education.

The investigator feels that there is still great possibility for future research in the adaption and translation of the PIQ and other principal-teacher interactions instruments into various Indian languages. This would go a long way in providing wider coverage of these instruments and contribute to the richness of the data collected in different schools.

Another important direction which emerges from this study is to have research studies conducted with the principal-teacher interactions in different collages/universities, thereby enlarging its scope to cover varied target groups with different learning needs in diverse educational environments.

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APPENDIX A
PRINCIPAL INTERACTION QUESTIONNAIRE (PIQ)
ACTUAL AND IDEAL FORM

Thank you very much for undertaking to complete the following questionnaire. It has been designed to research the most effective leadership styles in primary schools in Singapore and these styles will be used to relate to the teachers' use of computer technology in teaching and learning in these schools.

There are two parts to the questionnaire – the first part relates to the principal's interaction style and the second part contains statements about how you feel about the use of computer technology in teaching and learning.

Instructions – Part I

The next two pages are designed to gauge your opinion about the way the principal of your school interacts with the staff. Each page consists of a list of statements that you are asked to respond to.

The first page asks for your ACTUAL assessment of the principal's interaction style, the second page asks you about your IDEAL principal.

You will be asked your opinion expressed as “Never – Rarely – Sometimes – Often – Always”, which is summarised as N R S O A at the end of each statement. Please read each statement and circle the letter which is closest to your opinion.

Please note that the questionnaires are answered anonymously and will remain CONFIDENTIAL at all stages.

SCHOOL NUMBER

PRINCIPAL INTERACTION QUESTIONNAIRE (PIQ)

ACTUAL FORM

Please read the following statements and circle the letter that reflects your ACTUAL opinion of your principal

	Never	Rarely	Sometimes	Often	Always
1. This Principal talks enthusiastically about his/her school.	N	R	S	O	A
2. This Principal trusts the teachers at this school.	N	R	S	O	A
3. This Principal seems uncertain.	N	R	S	O	A
4. This Principal gets angry unexpectedly.	N	R	S	O	A
5. This Principal is an inspiration to his/her teachers.	N	R	S	O	A
6. If teachers don't agree with this Principal, they can talk to him/her about it.	N	R	S	O	A
7. This Principal is hesitant.	N	R	S	O	A
8. This Principal looks down on the teachers at this school.	N	R	S	O	A
9. This Principal gives clear directions	N	R	S	O	A
10. If teachers have something to say, this Principal will listen.	N	R	S	O	A
11. This Principal acts as if he/she does not know what to do.	N	R	S	O	A
12. This Principal is too quick to correct a teacher who makes a mistake.	N	R	S	O	A
13. This Principal knows everything that goes on in the school.	N	R	S	O	A
14. This Principal sympathizes with teachers.	N	R	S	O	A
15. This Principal is not sure what to do if a teacher goes against him/her.	N	R	S	O	A
16. This Principal has a bad temper.	N	R	S	O	A
17. This Principal is a good leader.	N	R	S	O	A
18. This Principal is patient.	N	R	S	O	A
19. This Principal is timid.	N	R	S	O	A
20. This Principal is sarcastic.	N	R	S	O	A
21. This Principal acts confidently.	N	R	S	O	A
22. This Principal is understanding when staff have problems.	N	R	S	O	A
23. This Principal changes his/her mind.	N	R	S	O	A
24. This Principal is impatient with the teachers at this school.	N	R	S	O	A

25. This Principal helps teachers with their teaching.	N	R	S	O	A
26. Teachers can influence this Principal.	N	R	S	O	A
27. This Principal seems unhappy.	N	R	S	O	A
28. This Principal is strict.	N	R	S	O	A
29. This Principal takes a personal interest in teachers.	N	R	S	O	A
30. These Principal gives teachers the opportunity to work independently.	N	R	S	O	A
31. This Principal puts teachers down.	N	R	S	O	A
32. This Principal is very demanding.	N	R	S	O	A
33. This Principal is friendly.	N	R	S	O	A
34. This Principal gives freedom to teachers to choose their own teaching methods.	N	R	S	O	A
35. This Principal thinks that teachers at this school can't do things very well.	N	R	S	O	A
36. This Principal keeps a tight rein on teachers' activities at school.	N	R	S	O	A
37. This Principal is someone that teachers can depend on.	N	R	S	O	A
38. This Principal gives teachers time to attend to their professional development.	N	R	S	O	A
39. This Principal seems dissatisfied.	N	R	S	O	A
40. This Principal is inflexible in demanding a strict adherence to rules and regulations.	N	R	S	O	A
41. This Principal has a sense of humour.	N	R	S	O	A
42. This Principal gives teacher the opportunity to develop their own courses.	N	R	S	O	A
43. This Principal is suspicious.	N	R	S	O	A
44. This Principal has to enforce his/her authority.	N	R	S	O	A
45. This Principal can take a joke.	N	R	S	O	A
46. This Principal allows teachers to decide things for themselves.	N	R	S	O	A
47. This Principal thinks that the teachers are not giving their best.	N	R	S	O	A
48. This Principal is severe when dealing with teachers.	N	R	S	O	A

PRINCIPAL INTERACTION QUESTIONNAIRE (PIQ)

IDEAL FORM

Please read the following statements and circle the letter that reflects your IDEAL opinion of your principal

	Never	Rarely	Sometimes	Often	Always
1. This Principal talks enthusiastically about his/her school.	N	R	S	O	A
2. This Principal trusts the teachers at this school.	N	R	S	O	A
3. This Principal seems uncertain.	N	R	S	O	A
4. This Principal gets angry unexpectedly.	N	R	S	O	A
5. This Principal is an inspiration to his/her teachers.	N	R	S	O	A
6. If teachers don't agree with this Principal, they can talk to him/her about it.	N	R	S	O	A
7. This Principal is hesitant.	N	R	S	O	A
8. This Principal looks down on the teachers at this school.	N	R	S	O	A
9. This Principal gives clear directions	N	R	S	O	A
10. If teachers have something to say, this Principal will listen.	N	R	S	O	A
11. This Principal acts as if he/she does not know what to do.	N	R	S	O	A
12. This Principal is too quick to correct a teacher who makes a mistake.	N	R	S	O	A
13. This Principal knows everything that goes on in the school.	N	R	S	O	A
14. This Principal sympathizes with teachers.	N	R	S	O	A
15. This Principal is not sure what to do if a teacher goes against him/her.	N	R	S	O	A
16. This Principal has a bad temper.	N	R	S	O	A
17. This Principal is a good leader.	N	R	S	O	A
18. This Principal is patient.	N	R	S	O	A
19. This Principal is timid.	N	R	S	O	A
20. This Principal is sarcastic.	N	R	S	O	A
21. This Principal acts confidently.	N	R	S	O	A
22. This Principal is understanding when staff have problems.	N	R	S	O	A
23. This Principal changes his/her mind.	N	R	S	O	A
24. This Principal is impatient with the teachers at this school.	N	R	S	O	A

25. This Principal helps teachers with their teaching.	N	R	S	O	A
26. Teachers can influence this Principal.	N	R	S	O	A
27. This Principal seems unhappy.	N	R	S	O	A
28. This Principal is strict.	N	R	S	O	A
29. This Principal takes a personal interest in teachers.	N	R	S	O	A
30. These Principal gives teachers the opportunity to work independently.	N	R	S	O	A
31. This Principal puts teachers down.	N	R	S	O	A
32. This Principal is very demanding.	N	R	S	O	A
33. This Principal is friendly.	N	R	S	O	A
34. This Principal gives freedom to teachers to choose their own teaching methods.	N	R	S	O	A
35. This Principal thinks that teachers at this school can't do things very well.	N	R	S	O	A
36. This Principal keeps a tight rein on teachers' activities at school.	N	R	S	O	A
37. This Principal is someone that teachers can depend on.	N	R	S	O	A
38. This Principal gives teachers time to attend to their professional development.	N	R	S	O	A
39. This Principal seems dissatisfied.	N	R	S	O	A
40. This Principal is inflexible in demanding a strict adherence to rules and regulations.	N	R	S	O	A
41. This Principal has a sense of humour.	N	R	S	O	A
42. These Principal gives teachers the opportunity to develop their own courses.	N	R	S	O	A
43. This Principal is suspicious.	N	R	S	O	A
44. This Principal has to enforce his/her authority.	N	R	S	O	A
45. This Principal can take a joke.	N	R	S	O	A
46. This Principal allows teachers to decide things for themselves.	N	R	S	O	A
47. This Principal thinks that the teachers are not giving their best.	N	R	S	O	A
48. This Principal is severe when dealing with teachers.	N	R	S	O	A