

THE IMPLICATIONS OF THE CONCEPTUAL  
SYSTEMS MODEL FOR FAMILY LIFE  
EDUCATION

by

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A thesis submitted to the School of Graduate Studies of  
the University of Ottawa in partial fulfillment of the  
requirements for the M.A. degree in Education.

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## ACKNOWLEDGEMENTS

The writer wishes to express her gratitude and appreciation to Dr. André Côté for his help and constructive criticism. Thanks are also due Dr. David Hunt for his personal communications. Assistance generously offered by Dr. Dorothy Thornton, Derek Cooke and Avrim Lazar is also appreciated.

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## ABSTRACT

Teacher student personality matching was discussed as being an important variable in teaching and learning success. An exploratory investigation tested the effect that matching teacher and student conceptual level has on academic achievement in Family Life Education.

In that investigation, teachers and students were matched on the basis of conceptual level. One hundred and twenty grade eleven students and six teachers completed a Paragraph Completion Test. The results were cast in a 2 x 2 table, with twenty-one students in each cell. The cells represented the interaction between a High Conceptual Level Teacher with High Conceptual Level Students; a High Conceptual Level Teacher with Low Conceptual Level students; a Low Conceptual Level Teacher with Low Conceptual Level students; a Low Conceptual Level Teacher with High Conceptual Level students. The four groups were then compared on their achievement scores in Family Life Education.

The results showed that the interaction was ordinal and marginally significant.

Hunt's theory of conceptual matching was described and an investigation of it was reported. The results suggested that elaborations of the current investigation could yield valuable information about steps which could be taken to ensure that students and teachers could derive the benefits of a harmonious environment.

## INTRODUCTION

"Rich or poor, young or old, we all share the same objective in life: how to live it better (Collins, 1973, p.1)". With this objective in mind, the Faure Report on Education, prepared for UNESCO, has recently emphasized the social responsibility that must be developed to allow for an individual's fulfillment. Many school administrators who are aware of the problems of those students seeking fulfillment in life are currently including Family Life Education as an integral part of the curriculum. The importance of these programmes is strikingly underlined by the recent report in the January, 1973, issue of Intellect, which states that "The Education for Parenthood program will reach 500,000 adolescents, in its first phase (p. 215)". This trend presents the classroom teacher with a problem of major proportions, since few teachers have had the opportunity for training specific to Family Life Education.

It seems that Family Life Education is a movement which is gaining acceptance and momentum. A recent controversy in Ottawa contrasts the attitudes of those who claim that children are exposed to filth and smut, in sex education programmes with those who maintain that a gentle mingling of religion and physical fact permeates the programme. Clearly, the controversy places teachers in a

precarious position. What sort of teacher is best able to meet the needs of the student without invariably provoking painful reactions from parents and trustees? The object of the current investigation is to attempt to answer the above question by relating teacher effectiveness to conceptual style. David Hunt's (1971) approach to the problem will be elaborated upon and a report of an investigation based upon that approach will be given.

The use of the conceptual systems model in Family Life Education classes would suggest grouping students according to their conceptual level. That procedure might help to achieve the closeness between teacher and student which fosters the democratic climate necessary for dealing with a topic involving sensitive interpretations of value judgements. The potential benefits accruing from that grouping demand extensive research.

Hunt explains learning difficulties that may occur in an academic context, as being related to the variable of personality. The suggestion in the current report is that an attempt be made to use Hunt's conceptual systems model in the Family Life Education context, as an aid to more effective contact between a teacher and the class. A description of Hunt's theory and its origins follows to see if its application might answer some of the difficulties seen in the school situation.



The following pages will explore the qualities that combine to create the ideal Family Life Education teacher. An attempt will be made to understand the effect of the personality of the teacher on the programme called Family Life Education. The conceptual systems model will be examined to see if it can be made use of, in terms of helping teachers to find out how they are functioning in a Family Life Education setting, and by so doing increase their effectiveness.

The plan of Chapter I is to discuss why the personality of the teacher is held to be an important variable in teaching success. Chapter II reveals the lack of emphasis that the variable of personality has received in teacher education. In Chapter III the reasons for choosing Hunt's theoretical approach are put forth. Chapter IV presents the methodology of an exploratory investigation of Hunt's theory. Chapter V presents the results of that study. A discussion of the results is to be found in Chapter VI.

## CHAPTER I

### THE EFFECTS OF TEACHER PERSONALITY ON STUDENT PERFORMANCE

The following chapter will examine teacher personality as a variable which should be given a high priority in choosing teachers for Family Education programmes. It is generally agreed that the Family Life teacher must be "good". That description is amplified in many ways, depending on the describer. Parents, administrators, students, and the teachers themselves, have differing perceptions of the teachers' role.

Given that the teacher can perform a valuable service for the adolescent in search of fulfillment, what makes a "good" teacher? It has been suggested that "good" teachers have such positive views of students as: acceptance, awareness, and trust (Witty, 1947; Ausubel, 1958; Rubin, 1965; Kerlinger, 1966; Dennison, 1969; Juhasz, 1970; Sanctuary, 1971; Hamachek, 1972; Rubin & Adams, 1972).

For the adolescent a good teacher could be a person who can help him to accept his sex role as part of his self concept. The Family Life Education teacher helping individuals make better adjustments to their physical and social surroundings is concerned with the child's relating of his self-concept to his individual behaviour (Symonds, 1951;

Combs & Snygg, 1959). Hoch (1971) shows that the anxiety level for students is decreased, as their confidence to make future decisions regarding their own sexual behaviour is increased. It may well be that the Family Life Education teacher, given that he has the proper characteristics, can play an important role in the adolescent's development.

How does the teacher's value system affect his capacity to be a "good" teacher? Pinard and Touchette state that:

Le titulaire de classe sera responsable du renforcement des valeurs familiales et sociales et de l'intégration de la dimension sexualité auprès des élèves de sa classe (1971, p. 8).

It would seem then that it is necessary for the teacher to be sensitive to the cultural and religious backgrounds of his students, in order to understand how they feel about contemporary and controversial issues (Kerckhoff, 1970; Blair & Pendleton, 1971; Fohlin, 1971). Lowes (1967) provides another example of the influence of the value system of the teacher on the student.

The greatest need of young people today is to find knowledgeable adults who will level with them, who don't preach to them but who will listen. Who won't tell but will guide them from a position of respect for the young. (p. 43).

Other authorities on Family Life Education conclude that a teacher, secure in his value system, can encourage classroom discussion of all aspects of sex (Harper, R. A. & Harper, F. R., 1957; Wilson, 1965; Reiss, 1968; Hamachek, 1969; Calderone, 1970). It is the teacher's value system

that helps him to cope with the social situation that often motivates classroom discussion. For example, when students appear with articles from the local newspaper on the increase in VD, the teacher with a value system intact, will be able to react as an educator, not a "stamper-outer of flames" (Johnson, 1968).

Concern about the kind of person teaching Family Life Education is justified on the basis of the impact the teacher has on the values of children (Gorsuch, 1971). By observing their teacher, children often learn attitudes relating to sex and sexuality (Fraser, 1963; Luckey, 1967; Kilander, 1970; Porter, 1970). Obviously, there is a need for teachers who present appropriate models for student identification.

The Vanier Institute of the Family has stressed that competent teachers be specialists with academic requirements. Notes from the conference claim that academic requirements include:

One year or longer at the university level;  
a university six-weeks summer credit granting course; courses at teacher Colleges including psychology, sociology, history of sexuality, psychiatry, anatomy, physiology, personal development, child development and emotional conditioning; in-service training in the form of seminars (1969, p. 26).

By contrast in the United States, a panel of fifty-two former presidents of state councils on family relations described the future Family Life teacher in terms of personal qualities.

Open, empathic, freedom-giving, mentally healthy, emotionally stable, competent and confident, understanding, warm, trusted, secure, flexible, sensitive, well-balanced, concerned, mature, responsive, relaxed, high moral standards, and, of course, have a great sense of humor (Kerckhoff & Hancock, 1971, p. 316).

It is necessary to emphasize that each viewpoint has limitations. Healthy balance of the two qualities academic and personal, combine to create the "ideal".

The quality of "flexibility" is always prominently featured in any attempt to describe the "ideal" teacher. Flexibility is considered by many psychologists and educators to be a very complex factor in personality (Cattell & Tiner, 1949). For example, it has been advanced that flexibility is a force to attempt change, a trait to generate spontaneous action (Scott, 1966), a method to vary technique (White, 1948), and a capacity to organize the environment (Harvey, 1967). Many recently published reports define flexibility and suggest how teachers might achieve a flexible teaching style (Joyce, 1967; Joyce, 1970; Joyce and Hodges, 1966; Joyce, Lamb & Siebol, 1966; Joyce & Harootunian, 1967; Joyce & Weil, 1972). Joyce & Harootunian (1967) described flexibility as "the extent to which a teacher modifies his behavior in response to student behavior" (p. 154). Working from the same theoretical position, Schroder (1971) provided a definition of flexibility which incorporated both behavioural and cognitive aspects.

in terms of an individual's ability to break away from his initial set, to engage in many restructurings of his perceptual field, and to reinterpret or redefine information so as to adapt it to new uses (p. 312.)

Schroder, Driver and Streufert (1967) suggested that the flexible person as compared with the relatively inflexible person is integratively complex and has the ability to combine incongruous items in complex ways as a base for attitude formation. They also showed that flexible persons as compared with relatively inflexible persons are more capable of using alternative solutions, are more tolerant of stress, and therefore their conceptual levels are higher. In the same report, they indicated additional behavioural characteristics of flexible persons.

They have more schemata for forming new hierarchies which are generated as alternative perceptions, or further rules for comparing outcomes. High integration structures contain more degrees of freedom, and are more subject to change as complex changes occur in the environment. (p. 224).

Harvey evaluated the differences between flexibility and rigidity by using the This I Believe Test and the Conceptual Systems Test. These are not unique as tests of a flexible teaching personality. In fact, four of Cattell's Sixteen Personality Factor Questionnaire have been shown to be correlated to innovativeness, a complement of flexibility (Zimmerman & Williams, 1971).

Further measures of flexibility, indicating its relationship to positive classroom behaviour, include:

1) a questionnaire by Levinthal, Lansky & Andrews, (1971), 2) the Shipley-Institute of Living Scale, 3) the Dogmatism Scale, 4) the Repression-Sensitization Scale, 5) the California Psychological Inventory, 6) the Teachers' Attitude Questionnaire (Lipsitz, 1972), 7) the Hahnemann Attitude Scale (Swift, 1973).

What does a flexible personality mean for a teacher? Breiner (1972); Berstein (1971) interpret flexibility as helping the teacher in his search for relevance to the how, why, and when of society. Although each society codifies the objects of greatest significance to it, the members of the society use different hierarchies for placing a value on the objects. Accordingly, the teacher's aim is to teach the students to value, without establishing a set of values for them (Murphy, 1973; Haro, 1973). The greatest influence that a teacher may have comes from the interaction of his personality with that of his students. Since the basic principle in teacher education has apparently changed from that of imparting knowledge to that of letting children create their own knowledge, the child's acceptance of the teacher is becoming a more significant criterion of teacher evaluation. Given that we accept flexibility and related variables as being important characteristics of an "ideal" teacher, what measures are being taken to assess the impact of different teaching personalities on teacher-student interaction? As the present investigation proposes to demonstrate Hunt's

attempt to match the conceptual styles of teachers to that of their students is an important step towards assessing the quality of flexibility.

It is puzzling to note that very little attention has been paid to the personality variable in teacher education. If it is as important as the above cited literature seems to suggest, it seems that it should be taken into account in preparing teachers for Family Life Education programmes. The apparent lack of emphasis in that area is the concern of this chapter.

There is little doubt that as Nelson and Carlson have contended, "Sex education does have academic credibility for inclusion in the curriculum (1973, p. 242. "Herman (1973) basing his view on thirty years' pediatric practice, proposed that 'Family Life Education' be taught in the schools; since little or no preparation is required for the most important adventure in our lives (Herman, 1973, p. 143)."

Clearly, Family Life Education represents an important dimension in the total education of the child.

If that is the case, what is being done to prepare teachers for teaching Family Life Education? Malfetti and Rubin (1967) have reported a survey of 250 teacher-preparation institutions that showed that only 8 per cent offered courses to prepare teachers for teaching sex education. Recently instituted programmes for the University of Ottawa (1968) and the Carleton Roman Catholic School Board (Ryan, 1973), are making positive contributions to practising



teachers. For example, after an intensive in-service training course at a Family Life Education Institute, teachers reported that they became more aware of their self-confidence in communication with their students (Luckey & Bain, 1970). The same type of increased confidence in teaching Family Life has been commented upon by teachers who have completed the course given by the Carleton Roman Catholic School Board (Ryan, 1970). Confidence helps free the teachers from their image as authority figures (Luckey, 1972). And it is then easier for them to use the discussion group approach that seems to be an appropriate method with Family Life Education (Seeley, 1970). An approach to learning Family Life Education that is group-oriented shows concern for the motives and satisfactions of the students (Luckey, 1972). It also seems to be a more appropriate way of acquiring the ideal of democracy such as, "establishment of goals and standards for effective living in our culture(Stemnock, 1972)".

Another possibility is to divide the discussion group into flexible smaller groups within the classroom (Wiles & Patterson, 1959; Moss & King, 1970). In the small group, it is easier for students to express themselves in role-playing (Flavell, Botkin et al., 1968). By assuming responsibility for their own learning through the process of role-playing, students can be assisted to feel empathy for the responsibilities of parents within the family.

Although "the job of sex education seems to have fallen to the schools by default (Reuben, 1971), "by

improving Family Life teacher education both at the university level and through in-service training, educators should be able to respond to the need with a professional performance (Cordasco, 1973)."

"Mirror, mirror on the wall, am I the best teacher of them all?" (National Education Association, 1972). Since teachers usually have to look after their own training is anything being done about evaluating their performance? As recently as 1964, Combs and Mitzel maintained that good teaching was impossible to measure objectively. Nonetheless, it seems important for a teacher to have some means of rating his performance in a more reliable way than merely counting on the emotional satisfaction he feels after a successful lesson. In an attempt to help the teacher realize how effective and competent at coping he is, the meaning of specific behavioural objectives such as social organization, kinds of questions, and conceptual approach has been suggested (Medley & Mitzel, 1959; Kleinman, 1966; Allen & Holyack, 1972). However, it is difficult to measure the teacher's influence, outside the classroom.

What other sources of feedback about his teaching performance are available to the teacher? One such source is the collection of comments made by students in the Family Life classes about both the methods and personal traits of the teacher. They should be listened to by the teacher who is trying to improve (Spaulding, 1963; Streufert & Castore, 1968; Bowman, 1970; Tuchman, 1971). From a practical stand-

point, with the credit system that now exists in high schools, student selection of teachers on their merits is inevitable, although it has always been "part of the real world of teaching" (Dalton, 1971). Schmuck (1970) noted that 10 percent of the students whom he interviewed were aware of a teacher who was disinterested. Confrontation with that fact may cause anxiety for teachers (Schmuck, 1971). Accordingly, administrators and supervisors must be sensitive to that anxiety when they check teacher performance (Busking & Powers, 1969; Frison, 1972). Undoubtedly, the students' favourable reaction combined with that of the administrators and supervisors, helps the teacher to place a fair evaluation of himself? When the teacher confronts himself in that mirror on the wall, he will see in his reflection a congruence in the image of his personal and professional characteristics.

The next chapter will explore the conceptual systems model as a potential source of increased personal growth for the teacher.

## CHAPTER II

## CONCEPTUAL SYSTEMS MODEL : PERSONALITY VARIABLE

The preceding chapter has shown that teacher personality appears to be an important variable in student learning and that personality as a significant teacher variable is not always sufficiently considered in teacher preparation. Accordingly, Hunt's model which emphasizes personality variables, and their effect on performance will now be examined.

Hunt's (1971) conceptual systems model attempts to explain how an individual relates to his environment; where the environment consists of all the dimensions, physical, mental, and psychological, of the surroundings within which a person must function. Included in these surroundings are objects, events, and people. Harvey, Hunt and Schroder (1961) who first formulated the conceptual systems theory believe that there are optimal types of environment for different types of people. It is obvious that different types of social environments facilitate functioning for some individuals while creating problems for others. It seems reasonable to expect that some attempt to match the personality of the learner with the environment within which he must function could result in an enhanced level of functioning. Practical use of the theory

of matching environments to people has been made by Hunt and Hardt (1967) in a summer Upward Bound programme, by Thelen (1967) with small groups, and by Swift and Back (1973) with troubled adolescents.

Now, Harvey and Schroder (1963) consider the self as a motivational construct which involves the curiosity to explore the environment, and to react to what is happening in that environment, according to its value and sensory orientation. In that way, an individual can control the environment vis-à-vis the environment controlling him. Through the use of conceptual system the self establishes the sets of rules by which it relates to the environment. Hunt (1966) compares the system to a computer programme which "... serves to filter, code, or 'read' events. (p. 278)".

The system aids the self to form a framework for coherent decision-making.

Since the system is a conceptual one, it means that the self has discovered a way of grouping objects, events, and people into categories, in order to avoid being overwhelmed by the environment. There is a variation in the level of conceptual structure; highly integrated information-processing systems have many more conceptual connections between them, while poorly integrated information-processing systems have fewer conceptual connections between them.

<u>Developmental Stages</u>	<u>Complexity of Information Processing</u>
	<u>Conceptual Level</u>
Stage C Independent	High
Stage B Dependent	
Stage A Unsocialized	Very Low
Interpersonal Maturity	

Fig. 1. Variations in Conceptual Level  
(After Hunt and Sullivan, 1974)

Figure 1 illustrates the relationships among information-processing rules in situations of high and low conceptual integration (Hunt & Sullivan, in press). As can be seen in the left half of Figure 1, conceptual development is viewed on a dimension of conceptual complexity or interpersonal maturity. The sequence of stages can be summarized as proceeding from an immature, unsocialized stage (A) to a dependent, conforming stage (B) to an independent, self-reliant stage (C). From a developmental view, the stages can be described in terms of increasing interpersonal maturity and increasing understanding of self and others. The individual fits into the environment according to a model, which Lewin (1935) defines as a pattern for behaviour. Obviously, each person's behaviour has different characteristics that can be described in different ways.

Harvey, Hunt, and Schroder (1961) have grouped four types of behaviour on a continuum that they described as varying from concrete to abstract, with corresponding simple to complex operations. Joyce and Weil (1972) have shown that different types of individuals have differing appropriateness of models. For example, some people need a model with external control; others function better in a non-directive teaching atmosphere; while somewhere in between, there is a group that flourishes when exposed to a variety of approaches.

Current research shows that some attention is being paid to teacher personality and its effect on performance. For example, Aspy and Roebuck (1972) assessed the classrooms of forty teachers, with the purpose of evaluating the level of cognitive functioning. The classes of half of the teachers remained at Level I of Bloom's Taxonomy (1956); the other half attained from Level II-VI. That superior performance seemed to occur where the teachers had a positive regard for students "It's nice to be nice, and it also teaches something" (Aspy & Roebuck, 1972, p. 368). That thesis was further elaborated by Jahoda (1961) who wrote about the ease people feel when their cultural patterns, values, and beliefs coincide with their environment, thus alleviating the experience of situational strains. Wolfe (1963) tested 136 boys, and found the conceptual level to be directly related to both role-taking and impression-forming ability. Persons adjudged to be more abstract had the ability to adopt conditional attitudes that resulted in their superior role-taking performance; also, those same persons could use more words to describe abstract functioning than those persons adjudged to be concrete who were more negative and resistant to self-expression. Pursuing that line of thinking, Swift and Black (1973) have suggested that teaching techniques depend upon the characteristic behaviour of students. In a similar vein, Thelen (1967) attempted to evaluate the teachability of a cohesive class. He studied 1640 students,



from grades eight to eleven, over a 3 year period. His findings agree with Hunt's (1966a) contention that the most dramatic application of the conceptual systems model occurs when an entire classroom is homogeneous with regard to conceptual structure (1966a). Dramatic results relating conceptual level to achievement have been reported by Tomlinson (1969); McLachlan (1969), and Hunt (1971). That is, low conceptual learners profit more from high structure in a classroom setting, and high conceptual learners profit more from low levels of classroom structure.

The aforementioned research makes the attempt to match teacher-student conceptual style and endeavour which is likely to result in better school performance. Then, some attention should be given to the selection of a classroom dimension which can be manipulated. It would seem that the basic dimension along which classroom environment can be varied is its degree of structure.

Figure 2 indicates the matched contemporaneous factors to be found in existing classrooms. In a high structure matched environment, the environment, the student is responsible for what happens in the environment. For example, he decides on the seating arrangements, discussion questions, and types of assignments. An application of matched environments is found in Hunt's (1973) Characterization

Developmental Stage	<u>Developmental</u>		<u>Contemporaneous</u>	
	Matched Environment for Development	Conceptual Level	Learning Style	Matched Environment
Stage C Independent	Unstructured with emphasis on autonomy	High	Capable of functioning in variety of structures	Either low or high structure depending on preference
Stage B Dependent	Encourage self-expression within moderate structure	Low	Need moderate structure	Moderate structure
Stage A Unsocialized	Accepting but firm; highly structured	Very low	Need high structure	High structure

Fig. 2 Conceptual Level Matching Models  
(After Hunt 1972c)

Project; a longitudinal study of those students who entered Thornlea in 1970. High conceptual level students placed "ability to study independently." (Hunt, 1973, p. 5), as their most positive classroom experience. Low conceptual students emphasized "individual personal contact with the teacher." (Hunt, 1973, p. 5), as one of their most positive classroom experiences. In their first year at Thornlea, many low conceptual students experienced difficulty which they attributed to the lack of structure that gave them too much free time during the school day. However, by the second year, the same students indicated increased self-responsibility and ability to utilize their free time. A possible conclusion is that increasing the conceptual level is a valid goal and it is predicted that both low and high conceptual level students will continue to increase in self-responsibility. As a continuation of the work at Thornlea, Hunt (1973a) developed the Aurora/Williams twinning programme. That project is designed to provide alternative secondary schools for students in a common attendance area so that they can themselves select the school whose climate is most appropriate to their own learning style. Students are helped in their decision-making process by the following description of learning styles and teaching methods.

Hunt states:

Students differ in how they learn, or in their learning styles. For example, some learn better by listening to the teacher, some by discussions, and others by working on their own. To say that

students differ in their learning styles does not mean that a student needs only one approach (exclusively), but that, generally speaking, he has one way of learning which for him is better than others.

Similarly, teachers use a variety of approaches, or teaching methods. For example, they may lecture, they may discuss, or they may let the student discover for himself. That is not to say that lecture, discussion, and independent study are the only methods, but they illustrate the variety in ways of teaching. No teacher uses one method exclusively, but he tries to use the method most likely to work with a specific class.

Grouping students by learning styles enables the teacher to use that teaching method most likely to work for the majority of students in that class. To say that the teacher will try to match the teaching methods to the class learning style does not mean that only one approach is used. For example, a teacher working with a class whose predominant learning style is for independent learning will not always assign them to work on their own. The teacher will use a variety of approaches with each class, and will ask students in each class to give their opinions and ideas about teaching methods throughout the year. Therefore, the learning style of the class is only to give the teacher some general idea about what teaching method is likely to work best.

Regardless of the class learning style, all classes will learn the same material. It is the way they learn which will differ, not what or how much they learn. Grouping by learning style is simply a procedure to make it more likely that the teacher can meet the needs of the students. (Hunt, 1972b).

Since conceptual level is held to represent cognitive complexity along with additional student characteristics, reflecting values and motivation (Hunt, 1970), the conceptual systems model could be used in any curriculum area. In order to do so it would be necessary to determine the conceptual level of the students in order to group them into classes, according to their conceptual levels. It will be recalled that reference was previously made to Thelen's (1967) attempt to do so as well as Hunt's (1966) supporting comment.

Since Hunt's theory appears to have some value, it seems justifiable to consider the procedure necessary to implement it. It appears that such a procedure has never been tried in Family Life Education classes. If such a programme is attempted, the literature leads to the hypothesis that low conceptual learners will profit more from a highly structured classroom environment and that high conceptual learners will profit more from a low structural environment. This position is consistent with the view of Davitz (1964) who stated that "We must tailor our programs and assignment of teachers to the needs and aspirations of the students (p. 173)." Ready (1973) and Burleson (1973) agree that the pedagogy and classroom methodology of sex education must be researched and evaluated; thereby providing factual information for those concerned with Family Life Education.

Rosenshine (1971) has suggested that the sort of research required might deal with the curriculum materials, packages, systematic observation, and measures of the personal development or growth of the students. Currently, very little is being done. For example, Rosenshine (1971) could not find more than fifteen studies focussed on the differences which teachers caused in the criterion of student gains.

It may be that the teachers of Family Life Education prepared to deal with teacher-student personality variables could implement psychological theories in education. It is

the purpose of the proposed research to attempt to show teachers ways in which they might achieve some of the goal.

Is the ideal of a flexible teaching personality relevant to all students? When Hunt (1971) classifies the models by degrees of structure, he suggests that low conceptual level teachers work better with low conceptual level students, and high conceptual level teachers work better with high conceptual level students. If that is true, is there a conflict between the concept of the Ideal Family Life teacher and the actual practice of choosing the teacher? If there is a conflict, it isn't perceived by Harvey (1963) who thinks that a 'good teacher' always tries to make the message of the lesson and the consequent behaviour of the students congruent with their conceptual baselines. That implies change in teaching style for the teaching of attitudes and values, since such topics cannot be taught by didactic methods (Levin, & Vevin, Loft & Lang, 1972). Such problems must be presented in a way that tempts the growing child into the next stage of development (Bruner, 1960). As Torrance (1965) implies, "the cat and the creative child both need a responsive environment". The practical implications of Harvey's (1963) position, as supported by the foregoing references involve the intrinsic acceptance of the child as a worthwhile person, regardless of his marks (Harvey, Hunt & Schroder, 1961). Another consequence of that philosophy is that teachers who enjoy appearing as

"little-g-gods (Wendel, 1970, p. 332)" that is, authoritarian, may be moved to attempt democratic group leadership. In that type of group, they should act as facilitators in the Rogerian (1969) sense, instead of their usual authoritarian selves. As Oswald and Broadbent (1971) note in their study of conceptual systems, "the fact that a teacher varies teaching activities does not insure that teacher behaviours will also vary (1971, p. 12)."

Another factor that causes uneasiness is an attempt to implement the matching models in education is the question of who will hire flexible teachers. Merritt (1971) has shown that principals tend to prefer teachers with attitudes similar to their own, regardless of the qualifications of those teachers. Perhaps that is a hypothetical question, since Joyce, Lamb and Siebol (1966) concluded that few who entered teaching were abstract or flexible in conceptual development. That is a discouraging conclusion in view of the report from Heil, Powell, and Feifer (1960) who discovered that flexible teachers were most effective with all types of students.

All the above factors support Hunt's statement that "it seems unlikely that the validity of an educationally-relevant psychological principle will have much to do with its acceptance in educational practice (1971, p. 49)." That cynical conclusion seems to have been reached most reluctantly by Hunt. If the theory of matching models is

to be implemented in schools, one of the major determinants of acceptability will be the degree to which the model is congruent with the teacher's own ideas of matching. Another consideration will be the tendency of the student to accept matching models when they are in a position to determine their own options. The most fundamental problem may well be whether administrators will bother to coordinate the time-tables to match classes and teachers according to personality. It is the contention of the present researcher that the potential benefits of attempts to match teacher and students is worth a considerable expenditure of time and energy.



## CHAPTER III

THEORETICAL BASES OF AN EMPIRICAL  
INVESTIGATION OF HUNT'S THEORY

The bibliography of studies conducted by Hunt, his colleagues, and students is increasing. Reviews of the applications of his theory have been published by Kagan and Kogan (1970); Pervin (1970); Joyce and Weil (1972). Twenty-two dissertations and theses based on Hunt's theory have been completed. Hunt and Sullivan's current book Between Psychology and Education (1974) stresses the need for the application of the theories of psychology to education. It is the intention of the present work to deal with Hunt's theory along three related dimensions: 1) concept of the person, 2) concept of the environment, and 3) concept of the interactive match.

Concept of the person

The representation of individual differences within the framework of a specific matching model is an expression of the importance of the individual. It is a form of matching individual differences to environmental differences. The purpose is to eventually make statements about the consequences of person-environment interaction. In Hunt's model, personal variation is represented by placing the individual along a single dimension of developmental stages. His

(1973a) paper, "Learning style and meeting the needs of the child" emphasizes the paucity of practical proposals for coordinating educational approaches with student needs.

The individual differences considered by Hunt (1971) are those of structural and organizing characteristics which reveal the abilities of prospective teachers. As the first step in a training programme, Hill (1971) has demonstrated, first, the importance of the ability to structure and organize material, and secondly, that it is amenable to change. That the conceptual systems theory seems to be a useful variable in predicting teaching styles is supported by Murphy and Brown (1970). Using 136 teacher trainees as subjects, they showed that the classroom verbal communication with authoritarian style teachers was restricted to a series of specific questions; whereas the teacher with a reflective style promoted questioning behaviour by using approaches related to how the student felt about his work. The same characteristics were examined as constructs of interpersonal strength and sensitivity by Peck (1970) who concluded that teacher trainees could be helped to modulate their behaviour in response to the stimulus they perceived from their students.

It can be seen that the concept of the person is an important factor to be considered in education. As well as describing the concept of the person, it is necessary to consider the concept of the environment in which he must

function.

### Concept of the environment

Educational environments may be viewed from two time perspectives. It is possible to consider the psychological atmosphere over a long period of time that is a developmental model or at a specific point in time that is a contemporaneous model. From the point of view of matching models, the time unit during which the match is thought to operate is important because the contemporaneous model unlike the developmental model does not contain a procedure for changing the Conceptual Level of a person. Since the classroom environment on any one day may not give more than a general and perhaps inaccurate indication of the classroom climate, Hunt strongly opts for a developmental perspective, wherein a class may be observed for a prolonged period.

Conceptions of the educational environment vary according to the emphasis which is placed by the student on either the content of the material presented or on the mode of presentation. The effect of the structure on high Conceptual Level and low Conceptual Level students is different. For example, in Hunt's Thornlea Characterization Project, many low Conceptual Level students experienced difficulty which they attributed to the relatively low structure existing in their school, Thornlea.

Other development of Hunt's work has been directed to the study of the ways in which individuals varying in their

level on integrative complexity respond to different kinds of environments (Pervin, 1970). Tomlinson and Hunt (1971) used treatments varying in structure from low 'example only' methods to high 'rule-example' methods to test the Conceptual Level matching model with 160 grade eleven students. It was predicted from the model that low Conceptual Level students would profit more from the increased structure found in 'rule-example' methods, while high Conceptual Level students would show less effect from treatment variations, but would tend to perform best in low structure 'example only' situations. The predictions were supported. Related studies have dealt with topics such as McLachlan and Hunt's (1973) description of the "Differential effects of discovery learning as a function of student Conceptual Level", as well as Hunt's (1971) description of the use of data banks developed by Joyce and Joyce (1969) as being effective in motivating student-directed learning.

The role of the teacher then becomes that of aiding students in developing search behaviours in order that the students may progress to a higher degree of conceptual complexity. It would also seem logical that the teacher help the students to become more reflective through attempts at theorizing. Hopefully, then, the student moves from viewing the environment solely in relation to himself to viewing it from the viewpoint of others.

The implications of the matching models theory seems to be that the teachers should be willing and capable of extending their generally preferred style of functioning specific environments depending on the Conceptual Level of their students. The next section will attempt to amplify the previous statement.

#### Concept of the interactive match

Having previously discussed matching the individual to the environment, an effort will be made to specify directions to be taken in order to attain that 'most desirable of goals'.

Once the person and the environment have been presented along comparable dimensions, it is possible to specify more precisely what constitutes a match between them. The problem then is to decide upon the degree of similarity between person and environment that will constitute a match. What is the optimal environment? Is it an environment that stimulates the student? Is it an environment that satisfies the student? What are the particular objectives for the educational environment?

Matching models that aim for immediate objectives or satisfaction are likely to define the match in terms of congruence or fit between person and environment. That is what Hunt has done in matching models on the basis of conceptual systems for the contemporaneous effect where there is a minimal variation in person-environment disparity.

However, Hunt has suggested that a different set of environments designed more to stimulate rather than satisfy the student are necessary to produce developmental growth (1971b). Examples of matching which are intended to produce a contemporaneous effect are found in the following works: Olson (1970) investigated participant satisfaction when Lutheran theological students' personality structure was matched with theoretically appropriate environments with the use of the conceptual systems theory. The results of four forced-choice questions seeking to measure global satisfaction with the training revealed that both the students and their supervisors were more satisfied. Wald (1972) showed that the interaction patterns of models of teaching and Conceptual Level appear in both primary and intermediate grade levels. Rathbone (1970) divided 20 teachers according to Conceptual Level; a student effect was observed in the significant change in behaviour by both high and low Conceptual Level teachers. Osofsky (1971) illustrated the same type of interaction between individuals in attempting to define the relationship of children's influence upon parental behaviour. To achieve that interaction, a strategy game task was role-played by 11-year-old girls. Differences in the child's behaviour resulted in differences in parental responses. The parents tried to change from directive to reflective teaching methods. Osofsky and Hunt (1972) described the Conceptual Level as being significantly related to the

interpersonal acceptance factor, which is held to be caused by differences in the child's behaviour and is measured by differences in parental response.

One of the problems of imposing upon the students a system whereby students' Conceptual Level is matched to the Conceptual Level of teachers, as in contemporaneous matching arises from the students' perception of that environment as being one which he himself desires as opposed to being one adjudged by the teacher as likely to produce growth and learning. McLaclan and Hunt (1973) are aware of that same problem when they discuss the differential effects of discovery learning as a function of what students require versus what the students like. That the environment a person prefers will be identical to the matched environment selected for him is an assumption that might be made in error. To resolve that issue, Hunt (1973) arranged for orientation meetings with parents and students of all schools connected with the Aurora/Williams twinning programs. As previously seen in the Aurora/Williams twinning programme, the purpose was to encourage students with low Conceptual Level scores to choose Aurora, the school with more structure, and conversely, to encourage students with high Conceptual Level to choose Williams. However, the ultimate selection depended upon the student; no coercion occurred. If there was a value judgement, it was made by the student. The following section elaborates upon the contemporaneous matching model and allows the derivation of research hypothesis designed to

test Hunt's theory.

Every educational curriculum includes a description of long-term goals that should serve as ultimate achievements for the teacher and student. In addition, there are short-term aims and objectives to be considered, for day-to-day learning.

David Hunt's contemporaneous matching model matches learning style, Conceptual Level, and degree of structure, according to personality to serve as a guide in achieving short-term goals and suggest procedures for reaching the goals. The application of the theoretical model may provide an effective approach to solving the practical problems inherent in the daily interaction between the teacher and the student. By using the theoretical model, information for its evaluation as a useful tool in education will also be available.

In a set of statements, the theory describes the environmental conditions appropriate for producing a specific effect in a particular student. Hunt attempts to match the environment and the student for the purposes of curriculum planning.

Since Hunt suggests that Conceptual Level is held to represent cognitive complexity (Hunt, 1970), the conceptual systems model could be used in any curriculum area to measure immediate achievement aims as a result of person-environment interaction. If the growth of the individual is



the product of his personality and his environment, then teaching would appear to relate strongly to a process of matching environments to individuals. The teacher operates professionally by radiating particular educational environments (Joyce, 1967). Environment can vary along the dimension of structure. Hunt advances the conceptual systems theory as a way of handling individual differences in the classroom.

Figure 3 indicates the matched contemporaneous factors which are invariably found in existing classrooms. It will be recalled that in a high structure matched environment, the environment is largely determined by the teacher. In a low structure matched environment, the student is responsible for what happens in the environment. It is possible to set out for the students the parameter and effects of conceptual style and classroom climate. Since Hunt's comments directed to those students who were involved in the Thornlea Characterization Project bear directly upon the articulation of the hypothesis of the current study, they are included below, as reported by Adams (1972):

structure	no structure
(-----)	
<p>The question we are concerned with is what is the best way for you to learn. This is the question that you should think about, and we will share with you some of our ideas. Now when you think about this, as you recall, the idea is that the opportunity to</p>	

## CONTEMPORANEOUS MATCHING MODEL

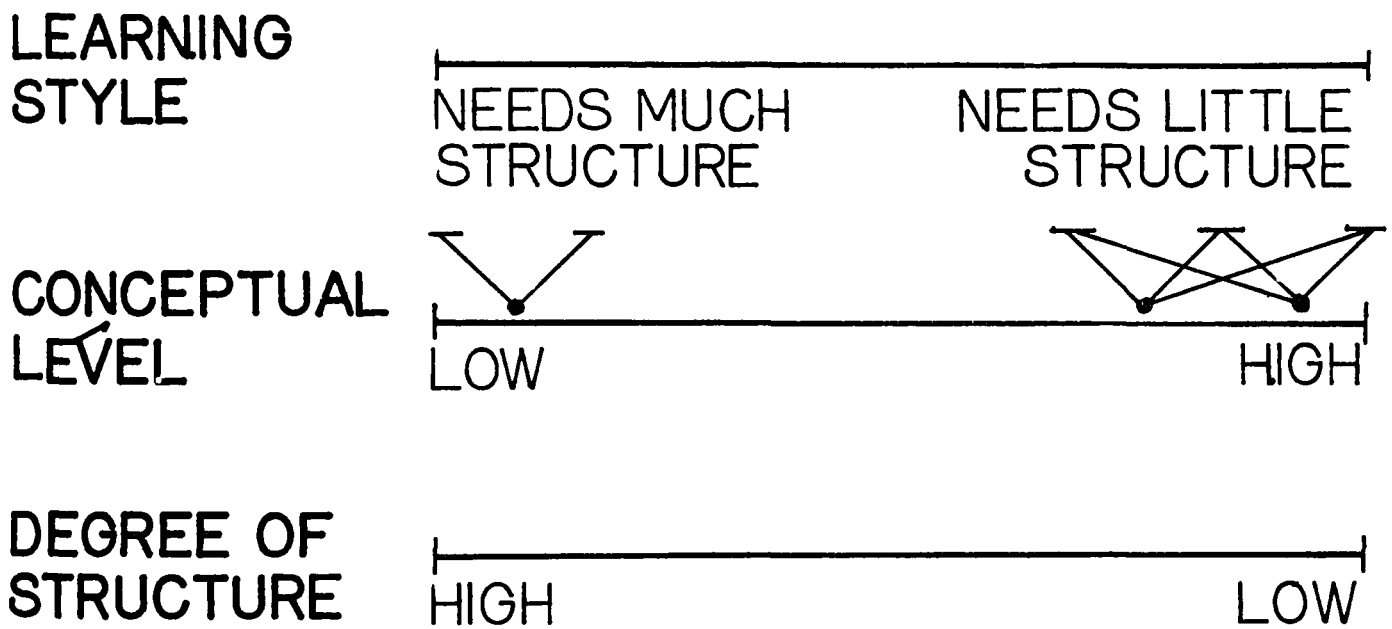


Fig. 3 Contemporaneous Matching Model  
(After Hunt, 1973)

learn varies from the very structured kind of experience over to a very unstructured kind of experience. It was described to you what is meant by this kind of experience, and I might just review it briefly. What we have here (pointing to the left side of the chart) in terms of the extremes - are instances where you have a lot of instructions, it's clear to you what you will do, the line of match is clearly given and you understand what you are supposed to do. Over here (pointing to the right side) you have almost no indication of what you are supposed to do when you are working on your own. Now in our work during the past five years in the Province, we have been trying to help students find out more about what we call their learning styles or what is the best way for them to learn. In doing this, we observed students in each different way of learning. Imagine, for instance, if somebody gave you an assignment which was completely independent study and said, "For the next week why don't you go out and try to find out about this." This would be the completely unstructured kind of approach. Over on this side you would receive a clear description of what is going on and you could proceed from there. So we have observed students learning in many different ways, and some students learn better in this way (structured) and some students learn better in this way (unstructured) and some students can learn in either way.

On the basis of the aforementioned theory and research, it is postulated that because of the particularly sensitive nature of Family Life Education courses, the contemporaneous matching of teacher student personality styles should result in better performance by the student. It should be noted that both teachers and students should also derive more satisfaction from their interaction. A more specific test of that postulate is found in the following hypothesis:

Teacher conceptual level will interact with student conceptual level so as to yield higher academic achievement when the teacher-student conceptual levels are matched than when they are not matched.

## CHAPTER IV

### METHODOLOGY OF AN EMPIRICAL INVESTIGATION OF HUNT'S THEORY

This chapter presents the procedures that were involved in conducting the experiment to test the hypothesis stated in the preceding chapter. The first two sections describe the sample and the instruments that were employed. The third and fourth sections set forth the methods by which the data were gathered and analyzed.

#### 1. The Sample

The subjects selected attended a rural school. Seventy-seven per cent of the students were bussed to the school. The remaining 23% of the students were from the small eastern Ontario town where the school is located. Both students and teachers were rated as being either high in Conceptual Complexity (HCL) or low in Conceptual Complexity (LCL).

To test the hypothesis, it was necessary to identify the extreme groups in Conceptual Level. From an initial pool of 120 grade eleven students, four experimental groups were formed. Subjects were assigned to groups which were formed within the existing classroom structures, on the basis of their Conceptual Level (CL) scores and their teachers' CL scores.

The division of subjects resulted in the formation of the following four cells:

- (1) High Conceptual Level teacher with High Conceptual Level students,
- (2) High Conceptual Level teacher with Low Conceptual Level students,
- (3) Low Conceptual Level teacher with High Conceptual Level students,
- (4) Low Conceptual Level teacher with Low Conceptual Level students.

To equalize the cells to include 21 scores in each cell, the following subjects were dropped, according to a random table (Glass & Stanley, 1970):

- Cell (1) Subjects Nos. 3, 21.  
 Cell (2) Subject No. 22  
 Cell (3) None  
 Cell (4) Subjects Nos. 1, 4, 5, 8, 9, 11, 13, 16, 18, 22, 31, 32.

## 2. The Instruments

Conceptual Level scores were obtained for each student involved in the present research. Scores regarding achievement in Family Life Education were obtained for 120 students, as determined by the year and mark assigned to each student by the classroom teacher.

Conceptual Level scores were derived a Paragraph Completion Test (Hunt, et al., 1968) the complete text of

which is to be found in Appendix A. Hunt's criteria for the classification of subjects as being HCL or LCL were used. That is, those subjects whose scores fell at 1.5 and above, on the Paragraph Completion Test, were adjudged to be HCL; those subjects whose scores fell at 1.4 and below, were adjudged to be LCL.

There are six parts in the test, consisting of different topics. The student is instructed to give ideas and opinions about each topic. At least three sentences are required in order to rate the response. Of the total 120 questionnaires distributed, 21 were returned incomplete, leaving a sample of 99 subjects.

The test was administered to all students in Grade 11. Scores for each subject were calculated by scoring each of the six responses individually on a scale from 0 to 3, and calculating the average of the six scores. Three judges were used to score the protocols. The scoring was performed in accordance with materials that Hunt sent, March 29, 1973. The inter-rater reliability, the calculation of which is found in Appendix B was .82 (Winer, 1962).

### 3. Collection of Data

Application to conduct the survey in schools was submitted to the Stormont, Dundas & Glengarry Physical and Health Education Teachers in 1973. Letters from the Physical Education Department Head, the High School Principal,

and the Superintendent agreed to the administering of the questionnaire. April 30, 1973 was agreed upon as a convenient date.

The students taking part in the study were informed by their teachers of the general nature and purpose of the study.

The test was timed for eighteen minutes and administered in accordance with the instructions from Hunt.

#### 4. Analysis of Data

The research hypothesis was tested by means of an analysis of variance (ANOVA) as described by Keith (1972) with conceptual style as the independent variable and performance in Family Life Education as the dependent variable.

The level of significance was set at  $p > .25$ .



## CHAPTER V

## PRESENTATION OF RESULTS

This chapter begins with a brief description of each of the various unforeseen problems encountered during the collection and analysis of the data, and of the solutions thereto. Following this, an inferential analysis of the data is reported

1. Some Unforeseen Problems and Solutions

It was not possible to manipulate the classes to ensure that High Conceptual Level teachers taught only High Conceptual Level students, and that Low Conceptual Level teachers taught only Low Conceptual Level students. The only solution was to deal with the existing classes and teachers.

The difference between the High Conceptual level teachers and the Low Conceptual Level teachers is  
 $1.7 - 1.3 = .4$ .

Cell 4, Low Conceptual Level teachers with Low Conceptual Level students had more students than the other cells. Numbers were dropped to equalize the cells, in order that all cells contained 21 students.

Table 1 shows that both the teacher Conceptual Level and the student Conceptual Level are related to academic achievement. This finding is consistent with the expectations previously stated and will be discussed in the following chapter.

Table 1 also shows that there was interaction significant at the  $p < .25$  level. The results are consistent with the predicted interaction of teacher and student Conceptual level. Accordingly, the null hypothesis was rejected.

Figure 4 shows that the interaction between High and Low Conceptual level students and High and Low Conceptual Level teachers measured by achievement in Family Life Education is ordinal.

TABLE 1

ANOVA FOR PERFORMANCE IN FAMILY LIFE EDUCATION OF  
HIGH CONCEPTUAL LEVEL AND LOW CONCEPTUAL LEVEL  
STUDENTS WITH HIGH CONCEPTUAL LEVEL AND LOW CON-  
CEPTUAL LEVEL TEACHERS

Source	df	ss	MS	F
A (TCL)	1	836.01	836.1	2.95*
B (SCL)	1	3182.01	3182.01	11.23*
AB	1	398.68	398.68	1.41*
R	80	226.74	283.43	

\*p .25

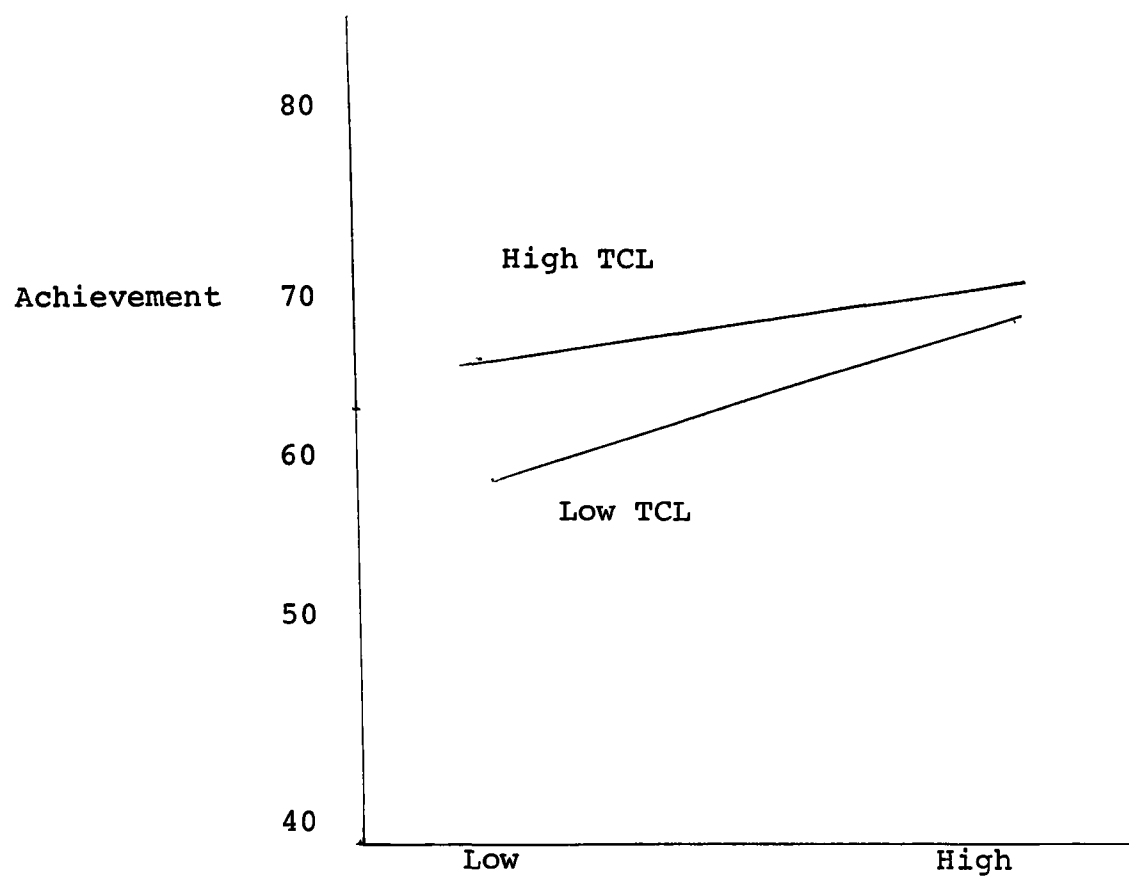


Fig. 4 Integration between Student Achievement and Conceptual Level with Teacher Conceptual Level.

## CHAPTER VI

## DISCUSSION OF RESULTS

As previously reported, the findings of the present study appeared to point in the direction predicted. However, results at this level of significance can only be interpreted as being supportive of a trend in the data. Hence, the results presented in the previous chapter are not discussed as well-substantiated bases for academic generalizations; rather, they are examined as implications for careful consideration if replication or extension of the present study is completed.

Originally, it was proposed to involve teachers with High Conceptual Level with students with High Conceptual Level, and teachers with Low Conceptual Level with students with Low Conceptual Level. Administrative expediency made it necessary to accept existing classes with mixtures of High and Low Conceptual level students. It is possible that this change might have reduced the significance difference.

Sampling difficulties might be overcome if experimental subjects could be assigned to classes following the results of the Paragraph Completion Test. It is suggested that the formation of homogeneous classes according to Conceptual Level would be particularly relevant and useful

for the purposes of future studies, designed to replicate or to extend the scope of the present investigation.

Teacher student personality matching was discussed as being an important variable in teaching and learning success. It was shown that teacher personality is an important variable which is often ignored in teacher education. Hunt's theory of conceptual matching was described and an investigation of it was reported. The results suggested that elaborations of the current investigation could yield valuable information about steps which could be taken to ensure that students and teachers could derive the benefits of a harmonious environment.

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APPENDIX A  
QUESTIONNAIRE

For Office Use Only

Name \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.  
 Last Name (First Name) (Initials)

School \_\_\_\_\_

Date of Birth \_\_\_\_\_

Residence: town (1)  
 farm (2)

Language spoken:  
 French and English (1)  
 French only (2)  
 English only (3)

Language spoken at home:  
 French (1)  
 English (2)  
 Both (3)

Language you feel more at ease speaking  
 French (1)  
 English (2)

Number of children in your family \_\_\_\_\_

Number of older sisters \_\_\_\_\_

Number of older brothers \_\_\_\_\_

Number of younger sisters \_\_\_\_\_

Number of younger brothers \_\_\_\_\_

On the following pages you will be asked to give your ideas about several topics. Try to write at least three sentences on each topic.

There are no right or wrong answers, so give your own ideas and opinions about each topic. Indicate the way you really feel about each topic, not the way others feel or the way you think you should feel.

You will have about 3 minutes for each page.

Please wait for the signal to go to a new page.

1. What I think about rules ...

Try to write at least three sentences on this topic.

WAIT FOR SIGNAL TO TURN PAGE

2. When I am criticized ...

Try to write at least three sentences on this topic.

WAIT FOR SIGNAL TO TURN PAGE

3. What I think about parents ...

Try to write at least three sentences on this topic.

WAIT FOR SIGNAL TO TURN PAGE

4. When someone disagrees with me ...

Try to write at least three sentences on this topic.

WAIT FOR SIGNAL TO TURN PAGE

5. When I am not sure ...

Try to write at least three sentences on this topic.

WAIT FOR SIGNAL TO TURN PAGE



6. When I am told what to do ...

Try to write at least three sentences on this topic.

WAIT FOR SIGNAL TO TURN PAGE

APPENDIX B

INTER-RATER RELIABILITY OF JUDGES

## CALCULATIONS OF THE INTER-RATER RELIABILITY OF JUDGES

Person	Judge 1	Judge 2	Judge 3	Total
1	.8	1.7	1.7	4.2
2	1.5	1.5	1.3	4.3
3	1.3	1.5	1.5	4.3
4	1.6	1.4	1.4	4.4
5	1.5	1.0	1.0	3.5
6	1.5	1.0	1.3	3.8
7	1.5	1.3	1.3	4.1
8	1.6	1.0	1.2	3.8
9	1.8	.8	1.2	3.8
10	1.7	1.2	1.3	4.2
11	1.2	1.5	1.3	4.0
12	2.0	1.1	1.6	4.7
13	1.8	1.3	1.8	4.9
14	1.7	1.3	1.5	4.5
15	1.7	1.1	1.5	4.3
16	2.2	1.3	1.7	5.2
17	1.5	1.3	1.5	4.3
18	1.1	1.7	1.3	4.1
Total	28.0	23.0	25.4	76.4

$$(1) \frac{G^2}{kn} = 108.09 \quad (2) \sum (\sum X^2) = 112.74 \quad (3) \frac{\sum T_j^2}{n} = 108.78$$

$$(4) \frac{\sum P_j^2}{k} = 109.06$$

SS

$$\text{b. people} = (4) - (1) = 000.97$$

SS

$$\text{w. people} = (2) - (4) = 003.68$$

SS

$$\text{b. judges} = (3) - (1) = 000.69$$

SS

$$\text{res} = (2) - (3) - (4) + (1) = 103.19$$

SS

$$\text{total} = (2) - (1) = 004.65$$

CALCULATIONS OF THE INTER-RATER RELIABILITY OF JUDGES  
(continued)

Source of variation	SS	df	MS
Between people	.97	17	.057
Within people	3.68	54	.064
Between judges	.69	2	34.5
Residual	103.19	52	1.98
<hr/>			
Total	4.69	71	

$$\text{Estimate of } \sigma^2 = \frac{MS_{b.\text{people}} - MS_{w.\text{people}}}{k MS_{w.\text{people}}} = .03$$

Estimate of the reliability of the 3 judges = k is

$$r_3 = \frac{3 \sigma^2}{1 - 3 \sigma^2} = \frac{3(.03)}{1 - 3(.03)} = .82$$

APPENDIX C

TABLES OF RAW DATA

## SAMPLING OF THE RAW DATA

	PCT SCORE	FLE MARK
Male High Conceptual Level Teacher	1.7	
MHCL TEACHER - BOYS WITH HCL AND HFLE		
212170	1.5	69
101630	1.5	72
077680	1.7	73
212180	1.8	73
MHCL TEACHER - BOY WITH HCL AND LFLE		
083690	1.7	57
MHCL TEACHER - BOYS WITH LCL AND HFLE		
212190	0.5	77
080660	0.7	67
086660	0.8	70
017680	1.1	71
109580	1.1	78
212200	1.3	72
MHCL TEACHER - BOYS WITH LCL AND LFLE		
090650	0.8	64
085720	1.0	32
107580	1.1	46
108530	1.1	61
117500	1.3	25
212210	1.3	65

## SAMPLING OF THE RAW DATA

	PCT SCORE	FLE MARK
Female High Conceptual Level Teacher	1.7	
FHCLT CLASS OF GIRLS WITH HCL AND HFLE		
029850	1.5	83
040730	1.7	71
041810	1.7	83
028750	1.7	83
037850	2.0	76
027870	2.1	93
019810	2.3	84
033750	2.5	75
039820	2.5	81
FHCLT CLASS OF GIRLS WITH HCL AND LFLE		
212120	1.5	63
001510	1.8	49
030660	1.8	52
212130	1.8	53
032710	1.8	65
003530	2.0	59
036660	2.1	52
038700	2.1	65
002520	2.2	57
FHCLT CLASS OF GIRLS WITH LCL AND HFLE		
212140	1.2	68
215110	1.2	80
212150	1.3	68
212160	1.3	71
FHCLT CLASS OF GIRLS WITH LCL AND LFLE		
054650	0.7	51
012620	0.8	52
048350	1.0	43
018660	1.0	63
016710	1.1	41

## SAMPLING OF THE RAW DAT

	PCT SCORE	FLE MAR
Male Low Conceptual Level Teacher	1.3	
MLCL CLASS OF BOYS WITH HCL AND HFLE		
073771	1.5	80
076741	2.3	93
MLCL CLASS OF BOYS WITH HCL AND LFLE		
092611	1.5	23
078711	1.5	50
215121	1.5	53
075751	1.7	45
121501	1.7	50
079771	1.8	58
119521	2.0	20
MLCL CLASS OF BOYS WITH LCL AND HFLE		
091621	0.1	68
072671	0.7	75
215130	1.2	70
116491	1.3	80
MLCL CLASS OF BOYS WITH LCL AND LFLE		
106551	0.3	63
062521	0.6	43
084681	0.7	30
110461	0.8	45
215141	0.9	50
103471	1.0	20
099561	1.0	35
215151	1.0	45
215161	1.1	35
014651	1.1	53
115481	1.3	53
114581	1.3	60
061611	1.4	58
074661	1.4	60
120431	1.0	50
065531	1.1	20
104491	1.1	35
082661	1.1	40
060581	1.1	50
093621	1.3	13
066481	1.3	50
071741	1.3	65
068561	1.3	30



## SAMPLING OF THE RAW DATA

	PCT SCORE	FILE MARK
Female Low Conceptual Level Teacher	1.3	
FLCLT CLASS OF GIRLS WITH HCL AND HFLE		
004600	1.5	66
026750	1.5	75
025870	1.5	84
005590	1.8	71
035770	1.8	73
211110	2.0	67
010600	2.0	69
034720	2.0	77
049600	2.0	78
024780	2.0	87
022890	2.0	88
020840	2.2	84
023670	2.5	81
FLCLT CLASS OF GIRLS WITH LCL AND HFLE		
212110	0.8	75
213110	1.0	74
009570	1.0	79
214110	1.0	79
057720	1.2	79
006590	1.3	76
031710	1.3	77
021790	1.3	78
FLCLT CLASS OF GIRLS WITH LCL AND LFLE		
047500	1.0	64
043680	1.2	65