

## CHAPTER TWO

### LITERATURE REVIEW

In this chapter, the literature review is divided into two sections. The first section presents a brief definition and explanation of cognitive style following the description of the development of field independence-dependence, field independence-dependence students and second/foreign language learning, field independence-dependence teachers and teaching behaviors, and field independence-dependence match and mismatch between students and teachers. The second section provides the research questions and hypotheses.

Due to the current insufficiency of the related studies under EFL learning context, most of the studies reviewed in this chapter were the studies under ESL learning context.

#### 2.1 Cognitive Style

Over the years, educators have asked questions about how people learn. To answer these questions, much research has focused on the areas of cognitive style (Williamson & Watson, 2006). Many second language researchers have shown interest in cognitive style as a trait that may affect second language learning. Basically, these efforts have attempted to assess the degree of association between students' cognitive styles and performance in a variety of second language tasks (Hansen & Stansfield, 1982).

Cognitive style, a psychological term, was originally used by Allport in 1937 (as cited in Keefe, 1987) to indicate how distinctive personality types influenced the quality of living and adapting. As Messick (1976) noted, cognitive style involved "information processing habits representing the learner's typical mode of perceiving, thinking, problem solving and remembering" (p.7). As Hansen and Stansfield (1982)

described, cognitive style referred to “variations among individuals in preferred ways of perceiving, organizing, analyzing or recalling information and experience” (p.263). For Witkin, Oltman, Raskin and Karp (2002), cognitive style was the “characteristic, self-consistent modes of functioning which individuals show in their perceptual and intellectual activities” (p.3). Cognitive styles were also defined as “characteristic modes of being that show up in perceptual or intellectual activity; they constitute stable, self-consistent forms of adaptation; and they form a link between the cognitive and personal/affective spheres” (Brodzinsky, 1982, cited by Paramo & Tinajero, 1990, p.1079). Advocates of the concept have been keen to distinguish cognitive style from ability and to show there are individual differences in performance in cognitive tasks that cannot simply be reduced to differences in intelligence. They argue that different styles are of equal value or can be equally effective in a task performance (Crozier, 1997).

As mentioned earlier, over the years there has been an enormous amount of research on describing and explaining a wide range of individual differences in terms of cognitive style. For instance, Reid (1995) identified cognitive style to include field sensitivity (field independence and dependence), analytic/global, reflective/impulsive, tolerance/intolerance of ambiguity and Kolb’s experiential learning model. Among these classifications of cognitive style, the field independence-dependence dimension has been the most extensively studied and has had the greatest potential for application to educational problems (Saracho, 1991; Swyter & Michael, 1982; Witkin, 1976; Witkin, Dyk, Faterson, Goodenough & Karp, 1962).

### 2.1.1 The Development of Field Independence-Dependence

Field independence-dependence, a cognitive variable, is defined as “the extent to which a person perceives part of a field as discrete from the surrounding field as a

whole, rather than embedded, or...the extent to which a person perceives analytically” (Witkin, Moore, Goodenough & Cox, 1977, p.7). According to Ramirez and Castañeda (1974), the phrases “field-independent” and “field-dependent” originated from psychological research on perception and were first described by Witkin et al. (1962). The research on perception was to assess subjects’ performance in a specific perceptual task concerning the upright in space.

These researchers differentiated field independent persons from field dependent persons by whether they “reflect preferred modes of relating to, classifying, assimilating and organizing the environment” (Witkin et al., 1962, p.71). Witkin et al.’s (2002) bipolar construct of field independence and field dependence measured the degree to which learners relied upon internal or external referents as they process information and interact with the surrounding field. In general, field independent individuals viewed objects apart from the background, but field dependent individuals were distracted by the surrounding field. In other words, field independent individuals could easily ignore disassociated parts, while field dependent individuals were easily affected by irrelevant details.

To make the characteristics of field independence-dependence clearer and more specific, Saracho and Spodek (1981) and Jonassen and Grabowski (1993) provided useful outlines comparing the two cognitive styles (see Table 1 and Table 2).

Table 1

Comparison between Field Independent Individuals and Field Dependent Individuals

Field independent individuals	Field dependent individuals
1. Perceive objects as separate from the field	1. Rely on the surrounding perceptual field

2. Can abstract an item from the surrounding field reorganized in different contexts	2. Experience their environment in a relatively global fashion by conforming to the effects of the prevailing field or context
3. Experience and independence from authority, which leads them to depend on their own standards and values	3. Are dependent on authority
4. Are oriented towards active striving	4. Search for facial cues in those around them as a source of information
5. Appear to be cold and distant	5. Are strongly interested in people
6. Are socially detached but have analytic skills	6. Get closer to the person with whom they are interacting
7. Are insensitive to others, lacking social skills	7. Have a sensitivity to others that helps them to acquire social skills
8. Prefer occupations that allow them to work by themselves	8. Prefer occupations that require involvement with others

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(From Saracho & Spodek, 1981, p.154)

Table 2

Differences between Field Independence and Field Dependence

Field independence	Field dependence
Analytic	Global
Generates structure	Accepts structure
Internally directed	Externally directed
Inattentive to social cues	Attentive to social information
Philosophical, cognitive	Conflict resolution
Individualistic	Sociable and gregarious
Distant in social relations	Affiliation oriented
Intrapersonal	Interpersonal
Reserved, aloof	Needs friendship
Experimental	Conventional, traditional

Generates own hypotheses	Influenced by the salient features
Conceptually oriented	Factually oriented
Acquires information to fit conceptual scheme	Acquires unrelated facts
Represents concepts through analysis	Accepts ideas as presented
Less affected by format/structure	Influenced by format/structure
Impersonal orientation	Gets feelings/decisions from others
Insensitive to social undercurrents	Sensitive to others
Ignores external stress	Affected by stress

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(From Jonassen & Grabowski, 1993, p.88)

A number of instruments have been developed to measure field independence-dependence. The perception tasks which are mostly used to measure one's field tendency include the body-adjustment test (BAT), the rod-and-frame test (RFT), the rotating-room test (RRT) and the embedded figures test (EFT) (Witkin & Goodenough, 1981).

In the BAT, the subject is seated on a chair in a small, specially constructed room. Both the chair and the room can be tilted clockwise or counterclockwise independently of each other, and the subject's task is to adjust the chair to a position where he/she experiences it as upright. People who perceive their own bodies as upright when they are fully aligned with the surrounding tilted room are defined as field dependence while people who, regardless of the position of the surrounding room, bring the body more or less to the upright are defined as field independence.

In the RFT, the substitute visual framework is a luminous square frame presented to the subject in a completely darkened room. The frame can be rotated about its center clockwise or counterclockwise. Pivoted at the same center is a luminous rod which can also be tilted clockwise or counterclockwise independently of the frame. The frame and the rod, presented in tilted positions, are all the things that the subject can see in the darkroom. Again, the task is to set the rod in true upright orientation.

Subjects who tend to align the rod with the orientation of the frame are considered field dependence while subjects who, ignoring the tilt of the frame, tend to approximate the true upright are considered field-independence.

In the RRT, it is the direction of the force on the body that is changed while the visual field remained upright. This relationship is achieved by seating the subject on a chair, which can be rotated through 360 degrees, within a small upright room driven around a circular track. The subject has to bring his/her position to true upright. It is identified that the subject who is influenced by the visual information, i.e. the visual field, in any of these tasks is also likely to be so influenced in the other two tasks.

Different from the above three tests which are concerned with the external visual field or the body itself as a primary referent for perception of the upright, the EFT does not involve body-field perception of the upright, and the performance of it is reported to be correlated with that of the perceptual tasks (Crozier, 1997). Subjects are presented with a series of paper and pencil problems, each of which involves a simple geometrical figure and a complex design which is so patterned that each component of the simple figure is made part of a clear-cut subwhole of the pattern; the simple figure is thereby effectively hidden. Field independent people are able to describe the simple figure quickly from the complex design while field dependent people are not able to identify the simple figure in the time allowed for search.

In addition to the tests mentioned above, preschool (for ages 3-5) and children's (for ages 5-9) forms of the embedded figures test as well as a group form of the embedded figures test for teenagers and adults are also developed to measure one's field tendency (see Coates, 1972; French, Ekstrom & Price, 1963; Messick, 1962; Witkin, Oltman, Raskin & Karp, 1971; Wu, 1974). Witkin argued that effective performance in all these tests required the person to 'disembed', to analyze and separate out the simple figure from its context, and he characterized field

independence as an ‘articulated field approach’ and contrasted it with a ‘global field approach’ (Witkin & Goodenough, 1981).

Such contrasting tendencies are believed to affect both cognitive and social behaviors and abilities. Field independence is associated with greater articulation and competence in cognitive analysis and restructuring, and field dependence with a more global approach and greater social and interpersonal competence. Either style may have advantages or disadvantages for a particular task (Witkin & Goodenough, 1981).

### 2.1.2 Field Independence-Dependence Students and Second/Foreign Language Learning

In accordance with Witkin et al. (1962, 1971, 1977, 1979), second language acquisition researchers (Chapelle and Roberts, 1986) have tended to define field independence-dependence (FI/FD) as a cognitive style, a bipolar, stable trait affecting how one thinks, feels and behaves. FI/FD cognitive styles have been theorized as being related to second language acquisition (Bialystok & Froehlich, 1978; Chapelle & Green, 1992; Dreyer, 1998; Naiman, Frohlich, Stern & Todesco, 1996; Seliger, 1977). FI/FD cognitive styles refer to whether people tend to rely on internal or external referents as they perceive and process information and as they interact with their environment. The contrast between FI and FD is closely related to analytic and global functioning; the two extremes of the cognitive style can be expected to do well in different types of language learning situations (Jamieson, 1992).

Success in different types of language learning situations has been proposed by researchers. FI individuals are thought to be independent and attentive to details; thus, FI individuals might show greater competence in language learning activities such as finding patterns, organizing data to make generalizations and learning rules (Krashen, 1977). On the other hand, FD individuals are considered to have an interpersonal

orientation; they are thought to be socially oriented and would be apt to converse and communicate (Brown, 1987); thus FD persons might do well in second language acquisition when acquiring the language by interacting with native speakers (Krashen, 1977). As for the application of learning strategies, FI people are apt to employ a hypothesis-testing approach to problem-solving. Conversely, FD persons tend to display passive, spectator-like approach to acquire information (Nebelkopf & Dreyer, 1973; Witkin et al., 1977). FI and FD individuals therefore are appropriately categorized as what Hatch (1974) called “rule-formers” and “data-gatherers.”

Furthermore, FI learners favor material that is more abstract, factual, impersonal and practical. When organizing material, FI learners may use internalized rules collected from experience to analyze or restructure the material. By contrast, FD learners favor material that has a personal, social content or that includes humor, fantasy, art and music. When organizing material, FD learners are likely to rely on the given external structure of the material to provide organization and insights (Carter, 1988; Kinsella, 1995). Accordingly, FI individuals are closely related to better performance in classroom activities, e.g., analysis, attention to details, and mastery of exercises and drills whereas FD, by virtue of their social outreach and perception of other people, are more successful in learning the communicative aspects of a second language (Dreyer, 1992; Dreyer, Wissing & Wissing, 1996; Naiman et al. 1978). Therefore, students are thought to exhibit different approaches to second/foreign language learning based upon their FI/FD tendency.

Effective learning may take place by either FI or FD tendency; nevertheless, the learning approach of FI learners corresponds with many of the strategies used by “good language learners,” as identified by Rubin (1975) and Stern (1975): successful learners take an active approach, are willing guessers, experiment and practice, attend to form, and constantly analyze, categorize, and synthesize (Brown, 1978; Gayle,



1981).

However, Rubin (1975) and Stern (1975) have also found that good language learners have a strong drive to communicate, try to use the language with others, monitor how well their speech is being received by others, and attend to social cues to meaning. The interpersonal orientation of FD people, then, may also be advantageous for language learning. Investigators of affective variables in foreign language learning have claimed that empathy, socialization and other FD traits are the keys to language learning success (Brown, 1978; Gayle, 1981).

Questions are thus been raised whether FI/FD might be differentially related to success on language tasks. In order to answer these questions, numerous studies have been carried out to study how field-independence-dependence affects the second language performance of students.

Many studies have suggested that FI is a strong predictor of successful second or foreign language learning. Naiman et al. (1975, 1978), investigating English-speaking Canadian students of secondary school studying French, found that FI was a significant predictor of L2 proficiency. They concluded that FI/FD students seemed to process and produce linguistic structures in distinct ways. FI was significantly related to greater success on imitation and listening comprehension tasks. In the same environment as that in the study of Naiman et al. (1975, 1978), Bialystok and Frohlich (1978) also found that FI showed a significant correlation with achievement in French reading, listening, writing and grammar tests. Chen (1991), who studied the relationship of FI and English proficiency of Taiwanese college students, further confirmed the significant correlation between FI and listening comprehension tasks related to both phonological and conversational parts. In a study of adult ESL students by Seliger (1977), a correlation was also found between FI and a sentence disambiguation test, thus supporting the hypothesis that FI was related to successful

L2 proficiency learning. Another study by Lieu (2000) explored the relationship between students' cognitive styles and tasks of English sentences among junior high school students in Taiwan; Lieu concluded a significant relationship between FI and performance in identifying English clauses tasks. Abraham (1981) studied the relationship between FI/FD cognitive styles of Spanish-speaking ESL students and the performance in grammatical rules. She also reported that FI was a significant predictor of performance in a fill-in-the-blank grammar test and compositions for adult ESL students. In another study, Abraham (1983) further found significant correlations between FI and the use of the monitoring strategy by ESL students in each of three tasks—fill-in-the-blank, proofreading and composition.

Although FI seems to be a positive predictor of successful language performance, some inconsistent and conflicting results about the relationship between FI and language performance have been revealed. For instance, according to Carter's (1988) study, FI was found advantageous for performance not only in formal linguistic achievement but also in functional oral proficiency tasks. The similar result was also detected by Chapell and Roberts (1986) who found that FI was correlated with linguistic and communicative competence in the TOEFL test. The results of the two studies are in conflict with the hypothesis proposed by Naiman et al. (1978), Dreyer, (1992) and Dreyer et al. (1996) that FI/FD might be related to the various language tasks distinctively. Contradictory to Carter's (1988) as well as Chapell and Roberts' (1986) studies, Day (1984) provided a different result by studying ESL students, pointing out a significant relationship between FI and performance in a cloze test but not in a test of communicative competence. This result is somewhat close to Hansen and Stansfield's (1981, 1982) and Stansfield and Hansen's (1983). In investigating the linguistic, communicative and integrative competence of Anglo college students studying Spanish, Hansen and Stansfield (1981, 1982) found that FI was associated

with linguistic competence and integrative achievement but not so much with communicative competence, deducing that speaking ability might be more closely linked to FD behaviors than FI ones.

Still, some other studies suggested that FI was not a strong predictor of second or foreign language learning. Bialystok and Frohlich (1977,1978), who studied high school students learning French in Toronto, pointed out that although a significant, positive correlation between FI and reading, writing and grammar tests was detected, FI was not a significant predictor when combined with other experimental factors. These investigators concluded that FI/FD was a very minor role in second language learning and was not strongly predictive of success in the second language learning. Another study conducted by Tucker et al. (1976) investigated secondary school students studying French as a second language in Canada. The investigation found no significant relationship between FI and performance in listening comprehension, reading comprehension or oral production tasks. Chapell and Roberts (1986) studied adult international students enrolled in the Intensive English Institute at the University of Illinois, measuring their English proficiency by TOEFL including a multiple choice grammar test, cloze and dictation tests as well as an oral test. They found little evidence for the relationship between FI and the cloze test, which is in contrast with the results of Day's (1984) and Stansfield and Hansen's (1983). In the same environment as Chapell and Roberts' (1986), Jamieson (1992) also studied ESL students using TOEFL as a measure which contained a listening test, a grammar test, and a reading test. She defined second language success in two ways: proficiency and improvement over a semester. She found that although FI was positively related to proficiency in English as a second language, it was not predictive of improvement over the course of a semester. In addition, the similar result was found in Elliott's (1995) study on the effects of FI/FD on the pronunciation accuracy of adult Spanish

learners at Indiana University. That is, FI was moderately correlated with pronunciation accuracy; it was not a significant predictor of improvement in pronunciation accuracy.

Yet, some studies, though not many, supported the hypothesis proposed by Naiman et al. (1978), Dreyer(1992) and Dreyer et al.(1996) indicating that FI/FD was related to the success of different language tasks. Abraham (1985) studied the effectiveness of two ESL lessons on participle formation of grammar. One lesson was based on a traditional deductive approach; the other lesson provided no rules but directed attention to many examples in context. A significant interaction was shown between FI/FD and lessons, with FI subjects performing better in the deductive lesson and FD subjects better in the example lesson. Johnson, Prior, and Artuso (2000) investigated the hypothesis that a more FD cognitive style might be adaptive to certain components of second language proficiency. The study indicated that a more FD style was associated with better performance in second language communicative measures.

Although the above studies on the relationship between FI/FD students and second or foreign language performance seem to indicate that FI students with the restructuring skills are successful in gaining second language in the classroom settings, inconclusive and mixed results have also been found in correlating FI/FD cognitive styles and second or foreign language learning (Carter, 1988). As was mentioned by Chapelle (1995), FI/FD cognitive styles provided new insights into learner differences in terms of how students approached learning, but they did not predict success in second or foreign language learning (McNaught, 1992).

### 2.1.3 Field Independence-Dependence Teachers and Teaching Behaviors

Besides affecting students' learning behaviors, cognitive style is believed to

provide a basis for instructional preferences to teachers. Teachers' cognitive styles may influence their choices of instructional approaches or may influence their behaviors in a way that interacts directly with students' characteristics (Packer & Bain, 1978).

Studies of teachers' preferences and of behaviors prove such expected differences. Teachers vary in their ways of instruction and interaction with students. Evidence regarding the effects of the teachers' cognitive styles was presented by Witkin et al. (1977), Hansen and Stansfield (1982), and Dreyer (1998). FI teachers had a favorable attitude toward the lecturing method, which was more directive, giving greater responsibility for organizing the learning situation to the teacher; these teachers thus preferred teacher-directed instruction, structured class activities and teaching situations which were less personal and involved less student-teacher interaction. FD teachers, on the other hand, had a favorable attitude toward the discussion method and preferred the use of democratic classroom procedures. They favored teaching situations that allowed interaction with students, such as student participation in setting goals and directing learning, the establishment of a warm or personal learning environment and open classroom discussions.

The above statement about teachers' FI/FD cognitive styles was supported by Wu (1968), who discovered that more FD teachers in social studies ranked discussion as more important to the practice of good teaching than either lecture or discovery approaches, which were favored by more FI teachers. Emmerich (cited by Witkin et al., 1977) also reported that FD teachers tended to regard class discussion as an effective technique for enhancing students' learning. He added that FD teachers felt encouragement of students to set up a group standard to be a useful teaching practice in organizing the teaching-learning process. Such student-centered approach favored by FD teachers was in contrast with teachers' standards frequently emphasized by FI

teachers.

Another finding of Emmerich's (cited by Witkin et al. 1977) disclosed FI/FD teachers' preferences for different kinds of reinforcement. FI teachers felt that it was effective in enhancing students' learning by informing the students when a response was incorrect and telling him/her why it was incorrect. Considering corrective feedback and negative evaluation involving critical comments as an effective teaching technique, FI teachers were likely to provide negative evaluation, i.e. expression of displeasure when a student performed poorly. Emmerich (cited by Witkin et al., 1977) further pointed out the perception of FI/FD teachers' teaching perceived by students. These students viewed FI teachers as encouraging students to apply principles; in contrast, FD teachers were more often seen as teaching facts.

Additional study on teachers' FI/FD cognitive styles was done by Moore (1973). Results from the study of patterns of verbal teaching behavior suggested that more FI teachers tended to use questions as instructional tools than FD teachers. More FI teachers tended to use questions in introducing topics and following student answers, whereas more FD teachers used questions primarily to check on student learning following instruction.

Although the above studies indicated that differences may lie in teachers' contrasting cognitive styles, little evidence indicated that either style produced better all-around teaching or learning (Tyler, 1978). Taking student achievement as the product of the teacher's teaching efforts, students of FI and FD teachers in Witin's (cited by Witin et al., 1977) study of cognitive style in the teaching-learning process were not significantly different in their total post mini-course test scores. Neither were the students different in their overall scores on a test of expressed interest in the subject matter of the course at the end of the course. Another study conducted by Hansen and Stansfield (1982) also revealed the same result that no significant

interaction was noted between students with FI teachers and students with FD teachers in students' achievement of linguistic, communicative and integrative competence, but the mean results of the study indicated that male students with FD teachers performed better than male students with FI teachers in linguistic, communicative and integrative competence, while female students with FI teachers performed better than female students with FD teachers in linguistic, communicative and integrative competence. Saracho and Dayton (1980) further found an overall effect of cognitive style of the teacher, indicating that students with FI teachers made greater gains in achievement than students with FD teachers.

From the literature review discussed in this section, although many studies found that teachers' different instructional behaviors were related to teachers with contrasting cognitive styles, not much evidence showed that teachers with contrasting cognitive styles were effective in students' second/foreign language learning, and even not many studies discussed that teachers with contrasting cognitive styles might place an important role in the learning effectiveness of students with different gender. It is, hence, recognized that more work is needed to determine whether and how the difference in teaching preferences and in teaching behaviors between FI and FD teachers affects the effectiveness of students' English performance.

#### 2.1.4 Field Independence-Dependence Match and Mismatch between Students and Teachers

In addition to looking at students' and teachers' cognitive styles as a potent educational variable, these researchers have also examined the learning effects and interaction effects of student-teacher stylistic match or mismatch. The cognitive style-matching hypothesis stemmed from early work on patient-therapist interaction (Wiltkin et al., 1968). It was found that FI patients were engaged in more extensive

communication with the therapist. Wiltkin et al. (1977) suggested that this result was directly attributable to the structure of the questions put to the patients. That is, FI patients received more open-ended questions whereas FD patients received more specific 'yes' or 'no' questions. It was argued that the therapists in so responding might be attempting to adapt to the differential needs of the patients. In line with this hypothesis, Karp, Kissin and Hustmeyer (1970) indicated that therapists more often assigned FI patients to a less structured therapy (psychotherapy) whereas FD patients were more often assigned to a highly structured therapy (drug treatment).

When the style-matching hypothesis of the patient-therapist interaction spreads to the educational environment, numerous scholars start to investigate the style-matching hypothesis between students and teachers. According to Hunt (1970), a match refers to providing types of instruction relative to the learner's capacity to benefit from them; otherwise, instruction becomes a frustration and disconfirmation, which stifle learning. A match focuses on the type of conditions and the mode of approach that interests the learner, and therefore promotes learning (Hunt, 1964, 1971).

Researchers studying this area have shown a preference for matching student-teacher cognitive styles which may facilitate pupil learning, hypothesizing that FI students will perform more effectively when matched with FI teachers and FD students will perform more effectively when matched with FD teachers (McKenna, 1990). In a study of the learning effects of student-teacher cognitive style match-mismatch, Ramirez (1973) proposed that Mexican American students performed less well in educational establishments because Mexican American students were mainly field dependent and teachers were mainly field-independent; there was a cognitive style mismatch between students and teachers. Packer and Bain (1978) examined FI/FD cognitive styles and teacher-student compatibility,



demonstrating the effectiveness of cognitive style matching in an educational environment. Positive matching effects were obtained on objective test performance and on students' and teachers' subjective ratings of each other at the extremes of the FI/FD dimension. DiStefano (1970) studied the interaction effects of student-teacher FI/FD match and mismatch by using subjects of students and teachers in a regular classroom situation. He concluded that students and teachers matched to each other in style tended to view one another positively, whereas students and teachers with contrary cognitive style tended to view each other negatively. Results similar to those of DiStefano (1970) had been found by other investigators (Gaeta, 1977; James, 1973). James (1973) confirmed significantly greater interpersonal attraction in matched than in mismatched student-teacher combination, noting that teachers tended to assign higher grades to those students who possessed cognitive styles like their own. These studies demonstrating student-teacher match in cognitive style make for greater interpersonal attraction than mismatch. As Wiltkin et al. (1977) conjectured, it was possible that teachers' higher evaluation of students similar to them in cognitive style might have reflected better student performance and teachers might indeed do better with students similar to themselves in cognitive style.

In contrast, different results of the match-mismatch effects were found. Hansen and Stansfield (1982) proposed that student-teacher FI/FD cognitive styles match or mismatch produced no significant effects on foreign language achievement. Only when the data were re-examined did the result show that FI females with the FI teacher outperformed FI females with the FD teacher while FD males with the FD teacher outperformed FD males with FI teachers. Another study conducted by Wiltkin et al. (cited in Wiltkin et al., 1977) on student-teacher cognitive style match effects did not show the expected student-teacher cognitive-style match-mismatch effect; instead, they found a student-teacher sex match-mismatch effect. In examining the hypothesis

of student-teacher cognitive style matching effects, Renninger and Snyder (1983) used five measures: one performance measure and four other subjective rating scale measures. The performance measure of student grades showed no evidence in favor of the matching hypothesis. Saracho and Dayton (1980) also examined the effects of student-teacher cognitive style match or mismatch, but they did not find any student-teacher cognitive style matching effects on academic achievement; instead, they demonstrated an overall effect of cognitive style of the teacher. That is, students with FI teachers showed greater achievement than students with FD teachers. These researchers concluded that a cognitive style match might be beneficial for FI students but a cognitive style mismatch was beneficial for FD students. The same result was further supported by Hayes and Allinson (1997) who found that matching of teaching/learning styles was more beneficial for FI vocational students who preferred more autonomy and less personal interaction, and that mismatch was more beneficial for FD students who preferred more guidance and structure. "This may be because FD students benefit from the structure that FI teachers typically provide" (Hayes & Allinson, 1997, p.185). As Kolb (1984) concluded, there were potential long term benefits when there was an intentional mismatch between learning style and instructional style.

Both Saracho and Dayton (1980) and Hayes and Allinson (1997) indicated that the cognitive style matching hypothesis failed and that it failed in a particular way. The results of their studies offered an alternative hypothesis that FI students benefited from a cognitive style match and FD students benefited from a cognitive style mismatch.

From the research evidence available, it has been clearly shown that there remains much debate over the effectiveness of cognitive style matching and mismatching between students and teachers. It is thus essential that data be examined

carefully in order to find out whether match or mismatch in cognitive style positively or negatively affects learning and teaching effectiveness.

## 2.2 Research Questions and Hypotheses

Based on the preceding literature review, it is in urgent need to study the relationship between student-teacher cognitive styles and students' English performance in listening, reading and writing. As Palmer (1979) pointed out, skill in linguistic analysis and restructuring was one of the indicators of a learner's language proficiency. Hence, the researcher uses listening, reading and writing language tasks as the indicator of students' language proficiency. The present study attempts to investigate the relationship by exploring the following questions:

1. Is there any significant correlation between students' field independence-dependence and students' English performance in the listening, reading and writing test?
2. Is there any significant correlation between teachers' field independence-dependence and students' English performance in the listening, reading and writing test?
3. Is there any significant correlation between student-teacher field independence-dependence match/mismatch and students' English performance in the listening, reading and writing test?

The hypotheses are made from the findings provided by most of the studies in the literature review; thus, the researcher hypothesizes that

1. There may be a significant correlation between students' field independence and students' English performance in the listening, reading and writing test.
2. There may be no significant correlation between teachers' field independence/dependence and students' English performance in the listening,

reading and writing test.

3. There may be a significant, positive correlation between student-teacher field independence-dependence match and students' English performance in the listening, reading and writing test.