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Hemispheric dominance and language proficiency levels in the four macro skills of Western Mindanao State university college students

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February 2000

HEMISPHERIC DOMINANCE AND LANGUAGE PROFICIENCY LEVELS IN THE FOUR MACRO SKILLS OF THE WESTERN MINDANAO STATE UNIVERSITY COLLEGE STUDENTS

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The Four Macro Skills Of The Western Mindanao
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APPROVAL SHEET

The Dissertation attached hereto, entitled HEMISPHERIC DOMINANCE AND LANGUAGE PROFICIENCY LEVELS IN THE FOUR MACRO SKILLS OF THE WESTERN MINDANAO STATE UNIVERSITY COLLEGE STUDENTS, prepared and submitted by JULIETA B. TENDERO, in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Education Major in Language Teaching (English) is hereby accepted.

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DEDICATION

To my husband, *Danny* and kids:

Ivie, James and Dexter, the

source of my inspiration

this dissertation is

wholeheartedly

dedicated.

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ABSTRACT

With Ellis' (1985) Neurofunctional Theory as basis, this study was conducted to determine the relationship between the hemispheric dominance (HD) and English proficiency (EP) in the four macro skills of the college students of Western Mindanao State University vis-a-vis their age, gender and area of specialization.

It was hypothesized that students' HD would have a significant correlation with EP scores in each of the four macro skills of listening, speaking, reading and writing; with their global EP score; and with both the macro and global EP scores when respondents would be grouped according to age, gender and area of specialization.

The sample consisted of 240 respondents selected through purposive, stratified and random sampling techniques from among the 5,096 students of the three Colleges of Arts and Sciences, Engineering and Technology, and Education of Western Mindanao State University, Philippines.

The students' hemisphericity was determined by the use of the standardized Hemispheric Dominance Test, the language proficiency levels were based on their scores in the five language tests, namely, the standardized Listening and Reading Comprehension Tests, the researcher-made Speaking and Writing Skill Tests and the Cloze Test. The gathered data were, then, analyzed using mainly the Pearson Product-Moment Correlation Coefficient (or Pearson r).

Pearson r correlation analyses yielded the following main results:

The respondents' HD was negatively and insignificantly correlated with their listening and speaking skills; but was positively, although not significantly, correlated with reading and writing skills.

There was a negative but not significant correlation between the respondents' HD and global EP scores.

HD was negatively and significantly related with the speaking skills among the "16-year old and below" students, was positively and significantly correlated with reading skills among "17 and 18 years old", was negatively and significantly related with the speaking skills and global EP scores among the "19 and 20 years old", but had no significant correlation with any of the macro skills and global EP scores among the "21- year old and above" students.

For both the males and females, HD was not significantly related with their EP scores in the four macro skills and global level.

Among the "Arts and Sciences" students, HD had no significant relationship with any of the four macro skills, neither with their global EP scores; among the "Engineering" students, it was negatively and significantly related with speaking skill and was positively and significantly related with the writing proficiency, and it had a negative and significant correlation with global EP scores among the "Education" students.

The study concluded that students' hemispheric dominance did not affect their English proficiency both in the four macro skills and global level; however, it did influence their English proficiency when they were categorized according to age and area of specialization.

In the light of the findings and conclusions, it was recommended that the English Department, language faculty and all stakeholders of English language teaching conduct continuous orientation, in-service trainings on students' hemisphericity, learning styles and multiple intelligences and their implications in identifying student capabilities and tendencies; that the English Department embark on a functional English Proficiency Test for incoming first year; organize English Plus and schedule a plethora of language activities to enhance students' skills; that English language researchers replicate the present study with "equated number" of respondents in terms of hemispheric dominance with Science and Technology students versus the Arts and Humanities students with the use of two sets of examination (one of the sequential/linear/step-by-step type and the other is creative/situational/open-ended type); that material developers/producers and testing preparation centers produce books and other materials that match students' hemisphericity; and that administration support the academic effort of colleges to enhance language enrichment of students and faculty upgrading, make policy pronouncements for all freshmen to undergo the English Proficiency Test, organize "English Plus" classes for two performers and create a task force to oversee and monitor these efforts to completion/realization.

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Background of the Story

The concept of hemisphericity of the brain processing system seems to be popular at the present time, but there is hardly a study about its relationship with language proficiency in the four macro skills.

As a product of his neuroscientific studies with aphasic patients, Sperry (1977) came up with his Split-Brain Model of Intelligence wherein he describes the functions of the left-brain and the right-brain hemispheres. He said that the left brain emphasizes language, mathematical formulae, logic, number, sequence, linearity, analysis and words of a song. On the other hand, the right brain emphasizes forms and patterns, spatial manipulation, rhythm and musical appreciation, images/pictures, imagination, dimension and tune of a song. Ellis (1985) favorably asserted with his Neurofunctional Theory that there is a connection between neutral anatomy and language function.

Based on this theory, Breien-Pierson (1988) conducted a study on the role of hemisphericity in the area of student composition and found out, among others, that the right brained students approached the composition process in a different manner than did the left-brained students and that the right-brained students preferred free writing and creating writing, while the left-brained students enjoyed doing research papers and book

reports. It was generalized that students' brain hemisphericity did influence the composing process.

Another study within the same premise was Waltz's (1990) which investigated the interaction between cognitive lateral functions and pictorial recognition memory for picture presented in three different color modes: realistic color, non-realistic color and monochrome. It was concluded that realistic/verbal color processing is a function of the left hemisphere and non-realistic /visual processing is primarily a function of the right hemisphere and visual information is processed primarily in the left hemisphere.

Breien-Pierson's study dwelt on the relationship between hemisphericity and writing compositions; whereas Waltz's on hemisphericity and visualization which is an aspect of reading.

It is clear that while writing skill and an aspect of reading comprehension skill were investigated in the two studies mentioned, the two other macro skills of listening and speaking were never covered. In addition, age, gender and area of specialization were neither considered. Because of that, there was a need to pursue the present study in order to generate a theory that learners' hemisphericity is related with language proficiency in the four macro skills taking into consideration their age, gender and area of specialization.

Statement of the Problem

The study sought to determine the relationship between hemispheric dominance and English proficiency scores in the four macro skill test of listening, speaking, reading and writing taking into account the variable of age, gender and area of specialization of students. Specifically, it purported to answer the following questions:

1. To which category of hemispheric preference do the students belong?

    a. Right-brain dominance?

    b. Left-brain dominance?

    c. Whole-brain dominance?

2. What is their proficiency score in each of the following macro skills?

    a. Listening   c. Reading

    b. Speaking   d. Writing

3. What is the respondents' global or overall English proficiency score?

4. Is there a significant correlation between the respondents' hemispheric dominance and English proficiency score in each of the following macro skills?

    a. Listening   c. Reading

    b. Speaking   d. Writing

5. Is there a significant correlation between the respondents' hemispheric dominance and global or overall English proficiency score?

6. Is there a significant correlation between hemispheric dominance and English proficiency scores when respondents are grouped according to:

     a. Age

     b. Gender

     c. Area of specialization

Significance of the Study

The result of this study may benefit most the language teachers, the English Department, the whole College of Arts and Sciences, the school administrators, the DECS Bilingual Program officials, the CHED Policy Making Body, and the producers/developers of language instructional materials.

For the English Teacher, the result of the study may direct them to look deeper into the parts of their English syllabi that need some improvement, enrichment or revision. It may also encourage them to improve their teaching styles to suit to the students' learning styles and diversify activities as well as methods of teaching to optimize learning success of students.

For the English Department, the result of the study may be used as basis in the department's preparation and production of suitably diversified language teaching and testing materials for classroom utilization by the English major as well as by the non-English major students.

For the entire College of Arts and Sciences, the study may provide insights

into the strengths and weaknesses of its students which may be needed in the successful implementation of the "English Plus" required by CHED.

For the school administrators, the result of the study may provide them insights as to the teaching needs of their language faculty as basis in designing and conducting appropriate in – service trainings that may help revitalize the teaching of English in the tertiary level in terms of content, materials and methodology.

To the DECS officials who are charged with the implementation and promotion of the Bilingual Program of the country, the study may provide additional base-line data in designing an effective bilingual program that will suit the needs and interests of their clienteles, particularly on English for Academic and Specific Purposes (EAP and ESP).

To the CHED, the policy making body of higher education institution, this study will provide documented feedbacks and stronger perspective to enrich and relevantize policy formulation and implementation, vis-à-vis general education subjects and courses.

Lastly, the theory generated in this study that hemisphericity is related with language proficiency when respondents are grouped according to their age and area of specialization is a significant contribution to the vast theory on hemisphericity and

language function. This is an extension of the theory posited by past researchers who looked into the cognitive profile of learners versus academic performance.

Scope and Limitation of the Study

This investigation is limited to the following variables namely: one cognitive style which is hemispheric dominance or the right/left – brain preference; the four macro skills of language namely: listening, speaking, reading and writing, and selected three moderator variables of age, gender and area specialization.

WMSU, which is the venue of the present study, consists of twelve colleges. Considering the researcher's limited resources, the population of the study includes only five thousand ninety-six (5,096) first to four year student s of the three colleges, namely: the College of Arts and Sciences (CAS), the College of Education (CED), and the College of Engineering and Technology (CET) of School Year 1999-2000. Out of this population two hundred forty (240) were randomly taken as the respondents.

Part of the limitation of the study was the imbalanced number of respondents for the left-brained (179), for the right-brained (52) and for the whole-brained (9) since the Hemispheric Dominance Test was given after the random selection of the subjects.

CHAPTER II

THEORETICAL AND CONCEPTUAL FRAMEWOK

This chapter discusses some related literature and studies about hemispheric dominance and English language proficiency. It also includes a few related articles and studies on three learner variables of age, gender and area of specialization. Since studies on hemispheric dominance in relation to language proficiency in terms of learners' variables of age, gender and area of specialization are not available, studies on closely related cognitive style of field-independence and field-dependence were used in this study.   The discussion of the said related literature and studies is done thematically and/or chronologically and is followed by the conceptual paradigm research hypotheses and definition of terms.

A. Review Of Related Literature

On Hemispheric Dominance and Related Cognitive Style Of Field Independence-Dependence

For a clear concept of how the left and the right-brain dominance came about, it is necessary to review topics on the brain's structure and function, hemispheric dominance and laterality, cerebral dominance and specialization for language.

Steinberg (1993) describes the brain as the most complicated organ of the body.   It lies under the skull and consists of approximately 10 billion nerve cells (neurons) and the billions of fibers that connect these cells. It is composed of four

major parts: the medulla oblongata, the pons Varolli, the cerebellum and the cerebral cortex in that order from the top of the spine.

The cerebral cortex is divided into halves termed hemispheres, which are connected by a tissue called the corpus callosum. Each cerebral hemisphere is divided into four sections: the frontal, parietal, temporal and occipital lobes. This is a convenient division of the brain into parts loosely based on physical features. Functions such as cognition (to some degree) occur in the frontal lobe, general somasthetic sensing (in the arms, legs, face etc.) in the parietal lobe, hearing in the temporal lobe and vision in the occipital lobe. Some of these areas are also involved in the structure and function of language (Steinberg, 1993 and Lemonick, 1995). This is in so far as the brain's structure and function are concerned.

With regard to hemispheric dominance and laterality, Steinberg (1993) explains that the brain controls the body by a division of labor, so to speak. The LH controls the right side of the body including, the right hand, the right arm, and the right side of the face, while the RH control s the left side of the body.

Even though the hemispheres of the brain divide the labor of the body, they do not do evenly. In a sense, we might say that the body cannot serve two masters: one side must take charge. This phenomenon, where one hemispheric is the major or controlling one is called dominance, thus, the term hemispheric dominance.

Steinberg (1993) continues that the brain assigns as it were, certain structures and functional to certain hemispheres to the brain. Language, logical and analytical operations, and higher mathematics, for example, generally occur in the LH of the brain, while the RH is superior at recognizing emotions, recognizing faces and taking in the structures of things globally without analysis. This separation of structure and function in the hemisphere is technically referred to as lateralization or more popularly as handedness: incoming experiences are received by the LH or RH depending on the nature of those experiences, be they speech, faces or sensations of touch.

Munzert (1980), contrasting the functions of the two hemispheres, says that the difference between left-and-right-brain functioning is qualified by the types of mental activities which are processed in each half of the brain. The left hemisphere is the control center for such intellectual functions as memory, language, logic, computation, seriation, classification, writing, analysis, and convergent thinking. The right hemisphere is the control center for the mental functions involved in intuition, extrasensory perception, attitudes and emotions, visual and spatial relationships, music, rhythm, dance, physical coordination and activity, synthesis, and divergent thinking processes. He proceeds to explain that the functions of the left brain are characterized by sequence and order in comparison to the functions of the right brain, which are characterized as holistic and diffuse. The left brain can put the parts together into an organized whole; the right brain instinctively sees the whole, then the parts.

Left brain thinking is the essence of academic success and intelligence as it is,

presently measured; right-brain thinking is the essence of creativity. In contradiction to Steinberg, the two hemispheres must function in a balance and integrated manner for wholesome human functioning to occur and for mental and physical health to be likewise in balance.

The idea of the two hemispheres' balanced and wholesome functioning was first postulate by Rene Descartes. As reported by Levy (1985), in the 17th century, Rene Descartes came up with the notable and influential notion that the brain must act as a unified whole to yield a unified mental world. His specific mental mapping was wrong (he concluded that the pineal gland - now known to regulate biological rhythms in response to cycles of light and dark - was the seat of the soul, or mind). But his basic premise was on the right track and remained dominant until the later half of the 19th century, when discoveries then reduced humankind to a half-brained species.

Fromkin and Rodman (1983) have noted that the long-standing interest in the relationship between language function and the brain in monolingual started with the following events:

1.) Theories of location, put forth by F. Gall and G. Spurzheim in the early part of the 19th century - that the brain is not a uniform mass and that some linguistic capacities are functions of localized brain areas. 2.) Phrenologists, properly known for their speculation regarding mental functions through an examination of the bumps and depressions in the human skull, were among the first to suggest that specific behaviors, including language are localized in different areas of the brain. 3.) In 1836, Dr.

Mark Dax described a series of aphasic case who exhibited language difficulties following injury to their LH for language dominance. 4.) In 1837, Karl Wernicke presented a paper that also described language disorders resulting from brain damage. 5.) At a specific meeting in Paris in April 1861, Dr. Paul Broca stated univocably that we speak with the LH.

Since then, several more studies have been conducted about the same interest –i.e. the relationship between cerebral dominance and language. In 1880s, John Huglings Jackson, for instance, a renowned English neurologist who conducted a study with patients having right-brain damage, suggested that the right hemisphere might be just as specialized for visual perception as the left brain was for language. Then, reports from 1930s on began to confirm the same finding. Patients with right side damage had difficulties in drawing, using colored bocks to copy designs, reading and drawing maps, discriminating faces and in a variety of other visual and spatial tasks. These disorders were much less prevalent in patients with left-brain hemisphere damage (Levy, 1985).

As mentioned, one of the major neurobiological discoveries of the nineteenth century was that language functions were primarily carried out in one hemisphere of the brain. This feature is known as the lateralization of language functions. This was first brought to widespread scientific attention by Broca in 1965. He recognized the fact that eight consecutive aphasic patients had lesions in the left hemisphere was unlikely to have occurred by chance and he therefore hypothesized: that the left

hemisphere was dominant for language, that the left hemisphere was responsible for right- handedness, that the left-hemisphere dominance for language and manual preference were linked, and that cerebral dominance for language would be reversed in the left- handed individuals (Genesee, 1988 and Stenberg, 1993).

Based on Broca's and similar other studies, it was further implied that despite their generally similar anatomies, the left and right cerebral hemisphere evidently had very different functions. Language appeared to be solely a property of the left side; the right hemisphere apparently was mute. This was generalized that the left hemisphere was dominant not only for language but for all psychological processes, unlike the right brain was seen as a mere relay station and only as an unthinkable automation. From pre-19th century whole - brained creatures, we had become half- brained (Levy, 1985).

The implication proposed by investigation was that although the left-hemisphere was specialized for language, the right hemisphere was specialized for many non-linguistic processes. Nonetheless, these views hardly swayed the general neurological community. Until 1962, the prevalent view was that people had half a thinking brain (Levy 1985).

Levy (1985) continues to report that by 1970 or soon the reign of the left brain was essentially ended. The large majority of research concluded that each side of the

brain was a highly specialized organ of thought, with the right hemisphere predominant in a set of functions that complemented the left. Observations of patients with damage to one side of the brain, of split-brain patients and of normal individuals yielded consistent findings. The right hemisphere, too, was a fully human and highly complex organ of thought.

Brandwein and Ornstein (1977) reported that they conducted a study about the left and the right-brain functioning of healthy ordinary persons doing ordinary things at the Langley Porter Neuropsychiatry Institute in San Francisco. The purpose of their investigation was to see if there is any evidence that such persons use the hemispheres of the brain in asymmetrical ways.

For their procedure, they designed a plan for placing electrodes on the head of a subject and taking his electroencephalogram (EEG) while he was performing certain tasks. Their assumption was that if the chart recorded variances in the alpha rhythms, it would provide proof that variations were occurring in the two sides of the brain.

The first experiment that they carried out was with the subject who was made to write a letter, the EGG showed many alpha waves over the right hemisphere. (A large number of alpha waves over a hemisphere indicates that it is idling while the other one is working). When the subject was asked to arrange forms in space, strong alpha waves appeared over the left hemisphere. They did similar test with other person in the laboratory, and found consistent results.

The researchers found that the left hemisphere control the functions of language, rational cognition, and sense of time-all function which are called sequential. In the right hemisphere of the subjects, such simultaneous activities occur as intuitive thinking, the establishing of spatial relationship, and the direction of certain body activities. Painting, sculpting, dancing are examples of right brain activities. The researchers also knew that the right brain has some facility for language and can assume left brain functions. And perhaps most of all, they knew that there are many paths to learning that do not require words.

Most of the characteristics of the left and the right hemispheres found by Brandwein and Ornstein in their neuropsychological study with ordinary individuals are somehow confirmed by Torrance (1980) in Brown 1994 who enumerated fifteen characteristics of the left-brain dominance and also fifteen characteristics of the right-brain dominance to wit:

Left- Brain Dominance: intellectual; remembers names; verbal responds to instructions and explanations; experiments systematically and with control; makes objective judgments; planned and structured; prefers established, certain information; analytic reader; reliance on language in thinking and remembering; prefers talking and writing, prefers multiple choice tests; control feelings; not good at interpreting body language; rarely uses metaphors; and favors logical problem solving.

Right- Brain Dominance: intuitive; remembers faces; responds to demonstrated, illustrated or symbolic instructions; experiment randomly and less restraint; make subjective judgments; fluid and spontaneous; prefers elusive, uncertain information; synthesizing reader; reliance on images in thinking and remembering; prefers drawing and manipulating objects; prefers open

– ended questions; more free with feelings; good at interpreting body language; frequently uses metaphors; and favors intuitive problem solving.

Brown (1994) reported Stevick's (1982) study on hemispheric dominance, which revealed that left- brain dominant second language learners are better at producing separate words, gathering the specifics of language, carrying out sequences of operations, and dealing with abstraction, classification, labeling and reorganization. Right – brain – dominant learners, on the other hand, appear to deal better with whole Right- Brain Dominance: intuitive; remembers faces; responds to demonstrated, illustrated or symbolic instructions; experiment randomly and less restraint; make subjective judgments; fluid and spontaneous; prefers elusive, uncertain information; synthesizing reader; reliance on images in thinking and remembering; prefers drawing and manipulating objects; prefers open images (not reshuffling parts), with generalizations, with metaphors and with emotional reactions and artistic expressions.

Based on her view of research studies on hemispheric dominance Mundel –Atherstone (1989) reported that:

> the research studies on right handed, hearing individuals suggest that left hemisphere of the brain is dominant for language functions. Contradictory results (Mc.Keener, Hoeman, Florian and Van Deventer, 1976) have been found for deaf persons, suggesting a reverse pattern of cerebral dominance with language functions centered in the right hemisphere. These authors proposed that the lack of exposure to auditory stimulation of spoken language may alter the hemispheric dominance for deaf people.

Giles and Robinson (1990) who reviewed several researches and research literature on the correlation between personality factors and language proficiency reported, among others: 1.) that Witkin, Goodenough, and Ottman (1979) characterize

field − dependent individuals as sensitive and interested in others, while field-independent individuals are self − sufficient and somewhat analytic, 2.) that Krashen (1981) views someone with an analytic orientation as being a potentially better language learner; thus it seems reasonable to assume the field independence would relate to achievement, and 3.) that Naiman et al (1978) has found, in fact, that field independence is related to both oral and aural second language skills, while Tucker, Hamayan, and Genesee (1976), Genesee and Hamayan (1980) and Hansen and Stansfield (1981) have also found relations between field independence and second language achievement.

Barss (1992) in his article "ASL and Dominance/Handedness" says that for people with mixed dominance in learning a second language, the use of the left hand as dominant to the right hand may increase one's speaking ability. Being a person with mixed dominance or ambidextrous, he testifies that when he learned ASL in college, his articulatory fluency increased overnight when he switched from trying to use his right hand as dominant to using his left hand.

On English Language Proficiency

The term "language proficiency" is commonly used and understood superficially by ordinary people as one's facility in the use of a certain language particularly in speaking and writing. However, it is not as simple as many have thought. It has varied complex meanings as viewed differently by language specialists.

Tabacug (1990) in her review of language proficiency opined that current views of communicative competence are not complete without tracing its roots to Chomsky's (1965) Linguistic theory, Dell Hymes's (1972) et. al. Communicative Competence, Canale and Swain's (1985) Theory of Communicative Competence and others. In agreement with this opinion, this study briefly outlined the concerned linguists' views on language proficiency. First, Chomsky (1965) in his linguistic theory claims that language competence is like an ideal speaker- hearer in a completely homogenous speech community who knows his language perfectly without experiencing any performance variables, such as: memory limitation, distractions, shifts of interest, attention and so on. Second, Dell Hymes (1972) and others proposed a broader scope of   competence   called   communicative   competence which includes not only grammatical competence but also contextual or socio-linguistic competence. Third, Canale and Swain's (1983) Theory of Communicative Competence has four dimensions which are: 1.) grammatical competence – the mastery of formal features of language 2.) socio- linguistic competence – knowledge of the socio- cultural rules of language use, 3.) discourse competence or the knowledge/skill in making connection of a series of utterances to form a unified whole both in spoken and written language forms, and 4.) strategic competence or skill in the use of appropriate strategy to compensate for whatever breakdown in communication due to deficiency in other aspects of communicative competence (Tabacug, 1990).

The fourth view is Cummins' theory of language proficiency which points that language proficiency in both L 1 and L2 is made up of two distinct and unrelated

dimensions: 1.) the basic interpersonal communicative skills or BICS dimension, and 2.) the cognitive academic language proficiency or CALP dimension. This is Cummin's (1979, 1980 and 1984) Cross- lingual Interdependence Hypothesis which states: 1.) that CALP is the reliable dimension of individual differences which is central to scholastic success and which can be empirically distinguished from BICS in both L1 and L2; 2.) that the same dimension underlies cognitive academic proficiency in both L1 and L2 – e.g. L1 and L2 CALP are interdependent; 3.) that older learners acquire L2 more rapidly than younger learners because their L1 is better developed; and 4.) that to the extent instruction through Ly is effective in developing Lx CALP, it will also develop Lx CALP provided there is adequate exposure to Ly and motivation to learn Lx since the same dimension underlies performance in both languages (Cummins 1979, 1980 & 1984 in Sicat, 1992). The fifth pioneering view of language proficiency is Oller's (1979) three hypotheses about factorial structure of language proficiency. These are the: Unitary Competence Hypothesis/Indivisibility Hypothesis, Divisibility Hypothesis, and Partial Divisibility Hypothesis.

The Unitary Competence or Indivisibility Hypothesis posits that language is a unitary entity, and that it cannot be broken down into components. On the contrary, the Divisibility Hypothesis states that language skills can be divided into components, and that it can be tested discretely. However, the Partial Divisibility Hypothesis combines the first and second hypotheses. It believes that in addition to general component common to all of the variances of all language tests, there ought to be

portions of variance reliably (consistently) associated with one another (for listening, speaking, reading and writing).

Viewed in the light of the Partial Divisibility Hypothesis, English Proficiency is still something to be desired in the tertiary level of Philippine education. The maintenance of English as medium of instruction in colleges and universities is based on the constitutional mandate – e.g. the provisions of the 1987 Constitution on the English language, Sections 7 and 8 as follows:

> Section 7:   For purposes of communication and instruction, the official languages of the Philippines are Filipino and until otherwise provided by law, English.
>
> Section 8:   This constitution shall be promulgated in Filipino and English and shall be translated into major regional languages, Arabic and Spanish.

Philippine colleges and universities' continued use of English is strengthened by the Policy on Bilingual Education of 1987 known as DECS Order No. 52, Series 1987 which recognizes this constitutional provision and "states that Philippines will continue to have a bilingual education policy, the regional languages can be used as a languages of transition (to Filipino and English), that English will continue as a language of instruction for Math and Sciences…" (Gonzales, 1988).

In line with the constitutional mandate and bilingual education policy, Pascasio (1981) stresses the importance of maintaining and improving English especially in the tertiary level by saying:

> The most important language at present in higher education is English because it serves as an instrument to acquire new knowledge in science and technology as well as in humanities and social sciences. Since the world of knowledge in these fields is available only in English, there is a need for us to maintain English if we want to transfer of knowledge in technology from developed countries to underdeveloped countries, like Philippines.

In the same token, no less than former Pres. Ramos in his speech during the 1994 Educators' Congress in Baguio City underscored the importance of empowering Filipino people with English. He said that it is a fact that English is our international language, thus our people must be empowered by preparing them for global changes. "Since we have that comparative advantage in English… by all means, let us maintain the advantage so that we can be more productive in business and production, perhaps in education" (Pres. Ramos, 1994).

On the contrary, the so called Philippines' advantage for business – citizenry fluent in English – is so fast disappearing. The comparative advantage is endangered by a growing majority of Filipinos who are neither adept at English nor Filipino, the national language based on the dominant Tagalog dialect (Sec. Gloria, 1994).

The dissertation of English in the Philippines had been perceived by teachers many years back. Salvador Lopez (1981), for instance, reported that teachers of Freshmen English in our colleges and universities unanimously deplored the fact that most of their students are virtuously inarticulate not in any language, but in their very vernacular, in Filipino as well as in English. Since English remains the medium of

communication in the domains of school, business, industry, judiciary courts, church, trade and entertainment and as the language of instruction at all levels, there is a need to maintain and improve English in college (Pascasio, 1981).

On Age

Yorio's (1976 in Brown, 1994) Classification of Learner Variables includes age as one factor of second language acquisition. This age inclusion is strengthened by the Critical Period Hypothesis that claims that there is a biological timetable for first and second language acquisition (Brown, 1994). Although this hypothesis has gained several supports, Appel and Muysken (1987) assert that there is no conclusive evidence for a critical period for second – language acquisition – i.e. there is no specific age before or after which a second language can never be learned completely.

The critical period, Appel and Muysken (1987) said, has been thought to be connected with the lateralization of the brain - the specialization of functions of different hemispheres of the brain. Lenneberg (1967) in Appel and Muysken (1987) assumes that this lateralization is finished at about puberty (children aged 12-13), but more recent research has cast serious doubts on this assumption. Krashen (1973), for instance, asserts that lateralization for the acquisition of certain second language skills is completed at ages 4 to 5. On the contrary, Kling, Davis, Gufer (1974) strongly believe that language acquisition does not cease at 6. This belief is affirmed by earlier studies [Harell 1957, Strickland 1962, Laban 1963, Menyuck 1963b, and O'Donnell,

Griffin, and Novis 1967 in Kling (1974)] that unanimously assert that significant language development still occurs in all children after the ages of 5 or 6. In addition Scovel (1969) and Sorenson (1967) in Brown (1994) stress that there is language acquisition even in adulthood.

In line with the time of lateralization for language acquisition, as quoted by Brown (1994) from Walsh and Diller (1981:18) different aspects of a second language are learned optimally at different ages:

> Lower – order processes such as pronunciation are dependent on early maturing and less adaptive macroneural circuits, which makes foreign accents difficult to overcome after childhood. Higher– order language functions, such as semantic relations are more dependent on late maturing neural circuits, which may explain why college students can learn many times the amount of grammar and vocabulary that elementary school students can learn in a given period of time.

This conclusion supports the neurologically based critical period, but principally for the acquisition of an authentic (nativelike) accent, and very strongly at all for the acquisition of communicative fluency, another "higher-order" process.

Still in the same token, Appel and Muysken (1987) opine that individuals can differ considerably with regard to their progress in second language acquisition. They say that some learners are very successful, others seem to acquire the language very slowly, or reach only low level of proficiency. They attribute this difference to many

factors influence the rate of second – language development, the three of which - intelligence, age and language aptitude have been specially mentioned.

On Gender

Steinberg (1993) in his review of studies about hemispheric dominance and laterality reported that some studies suggest that there are differences between the brains of males and females. One reported difference lies in the thickness of their brain hemispheres. In one experiment, Marion Diamond at the University of California at Berkeley, has shown the injecting hormones into young rats can affect the development of the thickness and size of the hemispheres of their brains.   While females normally have a thicker LH   (one specialization that involves general sensory functions) and males have thicker RH   (one specialization which involves visual-spatial functions), her injection of hormones had brought   a reversal of hemisphere thickness in the sex by the time that rats become young adults. Another reported difference between males and females in   relation to hemisphericity is in their toy preference.   As reported in the   1992   issue of the journal. Psychological Sciences (in Steinberg 1993), human female children (aged 2 to 8 years), who had high levels of androgen (a predominantly male   hormone)   due to a genetic glandular disorder, when given two sets of toys preferred and played twice as long with so called boy's toys (blocks, trucks, cars) than girls who had not had such an exposure to male hormone.

On Area of Specialization

"Area of Specialization" under professional- literate educational background is one of the factors of second language acquisition [See Yorio's Classification of Learner Variables (1976) in Brown (1994)]. Common sense would tell that the area of specialization or course determines the kind of instructional input. Krashen's Input Hypothesis claims that an important condition for language acquisition to occur is that acquirer understands (via hearing or reading) language input that contains structure "a bit beyond his or her present level of competence" (Brown, 1994). Based on this theory, the kind, level, and appropriateness of instructional input are essential in a genuine acquisition of a language.

The importance of input is also indispensable in the development of hemispheric dominance. Munzert (1980) strongly asserts that dominance of one hemisphere over another is essentially the result of learning and mental exercise. This assertion is somehow well- founded in Piaget's "Mental Structures" Hypothesis. As explained by Anicia Alvarez in her article entitled "Piaget For Classroom Teachers" (in the Curriculum Bulletin, August 1979:13), the "Mental Structures" Hypothesis claims that mental structures are mental blueprints that guide an individual's behavior in his/her day-to-day encounters and experiences with his family, friends and surroundings. These are constructed and reconstructed within the brain as the child grows in his intellectual development. For the construction of mental structures,

Alvarez reported that Piaget has viewed three factors: experience, social transmission and maturation. This implies that experiences including school experiences in general or those in their areas of specialization help construct mental structures which implicitly relate with the brain's hemisphericity.

B. Review of Related Studies

On Hemispheric Dominance and Related Cognitive
Style Of Field Independence –Dependence

Obler (1981), in her neurolinguistic research, noted that in second language learning there is significant right- hemisphere participation, and this participation which is "particularly active during the early stages of learning the second language" consists of strategies of acquisition like guessing at meanings, and of formulaic utterances.

Hall (1987) conducted a study to examine the relationship between four measures of reading proficiency and field dependence/field independence, and sex among 163 second grade children in small, urban school system. Results include a significant relationship between cognitive style and reading proficiency, that field independence was significantly related to proficiency in right word recognition, recognition of vocabulary in context, use of structure analysis in word recognition, and silent reading comprehension.

Witten (1989) of North Carolina State University made an experimental study to determine if academic performance of black college students could be affected by matching or mismatching a teaching method to their cognitive style –preferred learning style. Students were separated by levels of field orientation (field dependent-field-independent) and taught a psychology course in either a congruent or incongruent method. The cognitive theory was based on Witten's field dependent-independent orientation with the curriculum manipulated with a design based on Ausubel's advance organizer teaching method and Taba's inductive thinking teaching method.

Results indicated: 1.) that students' cognitive style was the most salient personality or demographic variable affecting academic achievement, 2.) that students designated as field independent tended to perform better than field dependent students on all treatment levels, 3.) that field dependent students while performing at essentially equivalent levels as field independent students when matched to a teaching method, were adversely affected with taught with an incongruent method, 4.) that student's perception of teaching style was most affected by the opportunity to ask questions and the warmth and genuineness by the teacher, 5.) that although high school GPA (intelligence) is not associated with field orientation or achievement, field orientation is related to academic achievement and 6.) that congruency of teaching method to cognitive style is a significant variable in education, accounting for as much influence on achievement outcome as the student's home environment and family income.

Borget's experimental study (1990) on the effectiveness of right- brain stimulation on children and their creativity and writing revealed, among others, that while both right and left-brain hemispheric preference groups demonstrated an increase in creativity, there was no significant difference found between the creative expression of those children with a left hemispheric preference and creative expression of those children with a right hemispheric preference.

Martin (1990) investigated the relationship between reading achievement based on the scores of verbal comprehension and perceptual organization from Comprehension Tests of Basic Skills (NTBS) and full scale IQ from the Wechsler Intelligence Scale for children (WISC-R) given to gifted grade III children. Findings include that there is no significant correlation between an obtained WISC-R full scale IQ score, and the reading achievement scores obtained from CTBS.

Rosa (1991) of Wayne State University conducted a study which purported to find out relationship between cognitive styles and the reading of narrative and expository among 150 fourth grade students in three elementary schools. The results include that cognitive style groups were manifested in certain aspects of reading comprehension.

Cheng (1991) investigated field-independent-dependent (FI-FD) differences in achievement motivation in two studies. The purpose of Study I was to investigate FI-FD differences in motivational orientation, and that of Study II to

examine FI-FD differences in task-involving conditions. Results revealed no FI-FD differences on level of thinking for the ego-involving condition. For the task-involving condition, field independent individuals showed higher level of thinking than field-dependent individuals. There were no FI-FD differences on ability attribution involving condition. There was a positive relationship between ability and effort attributions for field-independent individuals under the task-involving condition. Field independent individuals who judge their performance as good were found to score higher on ability than effort attribution under the task-involving condition.

Martin, L. (1992) conducted a study which inspected the specific instructional component of learner control of sequencing of instruction and the specific learner characteristics of field dependency. Although both sequencing and field dependency have been studied for some time, a recently introduced technological innovation of computer-based instruction via hypertext programming allowed the collection of learner sequential pattern data that was previously not available. This study correlated patterns with a field dependency measure and posttest achievement. The study found that there were significant relationships between the field dependency measure and pattern types.   However, there were no significant relationships between the pattern types and posttest scores.   Only subjects' level of education had a relationship to posttest scores.

Martin, S. (1992) of the State University of New York at Albany conducted a study mainly to determine the extent to which cognitive style was related to metaphoric

comprehension. He found out, among others, that field-independent persons typically score higher on the test of metaphoric comprehension than field-dependent individuals.

Rodriguez (1992) who investigated the effects of bilingualism on the cognitive development and linguistic performance of children at various ages living in the same cultural environment revealed among others,   that   there   were no significant differences   in performance and that this could be attributed to lingualism, grade, or age with the exception of language proficiency correlated with cognitive level on analytical reasoning.

Sicat (1992) conducted a psycho-linguistic study on the relationship of students' cognitive styles and personality traits with academic language proficiency in the cloze, reading and writing tests in English and concluded: 1.) that proficiency in the cloze performance test is a function of field-independence, a cognitive style, 2.) that proficiency in the   reading comprehension test   is a function of category-width and field-independence,   both cognitive styles, and self-esteem, a personality trait, and 3.) that proficiency in the written composition test is a function of field-independence, a cognitive style.

Kini (1993) of Texas A & M University who studied the effects of cognitive learning style   and   verbal and visual presentation modes on concept learning in computer-based instruction among 192 undergraduate volunteer subjects found out that field independence- field dependence and verbal-visual cognitive style dimensions are

independent; that individuals presented with a lesson format that matched their verbal/visual preference did not seem to improve their performance, and that there was no main effect of the FI-FD cognitive style on the performance measure indicating that the more FI individuals did not differ significantly in achievement from their less FI peers.

Still in 1993, Staehler of the University of Wisconsin, Madison conducted a study on the relations among cognitive styles, alternative methods of instruction, academic performance, and motivational factors. In his study it was hypothesized that field independent learners would learn more effectively, perform better, and show higher motivation in classroom where direct methods of instruction were used. Field dependent learners would learn more effectively, perform better, and show higher motivation in classrooms where cooperative learning methods of instruction were used. Results revealed that there was no significant difference in academic performance. However, motivation results indicate that changes in pre-treatment versus post-treatment motivational score occurred among students whose cognitive styles were matched with preferred method of instruction.

On English Language Proficiency

Rojas (1987) who studied the reading difficulties of second year high school slow learners as basis of a remedial reading program, concluded, among others, that performance in reading of the second year slow learners was very poor in view of the

errors which ranged from 63.33 to 83.33 percent of the different reading skills. Such errors were due to difficulties met on literal comprehension, interpretative skills, vocabulary and study skills, and general comprehension and language skills.

Tabacug (1990) looked into the relationship of socio-psychological distance/ proximity of two language groups: the second language learning groups (2LL's: Tausog, Subanen and Cebuano college students), and the target language groups (TLL's: Zamboangueños, Tagalogs and Americans), and the extent to which this distance (or proximity) influenced the second language learning groups' proficiency in Chabacano (CHA), Filipino (Fil) and English (Eng). She concluded, among others, that the socio-psychological variables of dominance, integration strategies, attitudes, motivation and language valuation are crucial factors in establishing the low-filter environment where the 2 LL's learning or acquisition of a second language is enhanced, promoted and influenced, but are not strong determinants to high proficiency.

Vegare (1993) who conducted a study to determine the assessed language proficiency and actual performance of student teachers of WMSU revealed, among others, 1.) that the overall English proficiency level of the student teachers was poor, yet, their performance in both the overall practice teaching and in the practicum of teaching English subject were good, 2.) that student teachers' overall LP was highly correlated with their overall practice teaching performance, and 3.) that varying degrees of correlation existed between components of LP and the actual teaching performance in English subject. Proficiency levels in the components of listening and

speaking were around highly correlated with actual teaching performance in English. However, proficiency levels in several other components (of grammar, vocabulary, reading and writing) had low, but significant, correlations with the actual teaching performance in English.

Silorio's (1996) study entiled "Reading Comprehension: A Predictor to the Performance of Fourth Year High School Students in Major Academic Subjects in WMSU" revealed: that the total reading comprehension skill is directly related with the final average grade in English (F = 0.000), that the total reading comprehension skill is directly related with the final grade in Social Studies (F = 0.000) and that all components of the reading comprehension skill test are significantly related with the final average grade in Mathematics (F = 0.000).

Marmoleño (1999) who conducted a study on the performance of the Ateneo de Zamboanga Grade School students on the Reading Test Level I and Level II conducted among others, that as the students' grade level increased, their reading proficiency level decreased.

On Age

"Age" is also a predictor of academic achievement as proven by Hawkins' study. Hawkins (1987) of East Texas State University conducted a study to determine whether there is statistically significant combined predictive value of: 1.) learning style characteristics and personality factors on academic achievement with the

effects of academic difficulty (estimated university GPAs) removed; and 2.) the specific demographic variables (age, ethnicity, perceived socio- economic status and size of family of origin, and high school enrolment classification) on academic achievement with the effects of academic difficulties removed after accounting for any statistically significant predictive contributions of learning style characteristics and personality. The results include that the levels of academic achievement increase for the following individuals: abstract thinkers, more sober students, more tense students, more conservative, and <u>older students.</u>

Kapadia (1987) of Memphis State University conducted a study to explore the relationship between cognitive styles and achievement in reading, language arts and mathematics in the elementary grades under two modes of instruction, three cognitive styles selected were field-independence-dependence, reflection-impulsivity, and internal-external locus control. Each of the cognitive styles was viewed and measured as a continuum rather than as a dichotomous dimension. The study has also taken into account gender, age (grade level 1) I.Q. attitude towards computers, and time on computers. Results revealed that one of the cognitive styles, except the efficiency dimension was a significant predictor of achievement gains. Age (grade level) seems to be the most significant predictor of achievement gains. The lower the age (lower the grade level), the higher achievement gains.

A study about age and language proficiency which gives unique result is Viise's. Viise (1992) who conducted a study comparing child and illiterate adult

spelling development   revealed that spellers, both adults and children make similar errors at similar instructional levels on most of the spelling features. The differences which were found can be divided into 2 main categories: the adults made significantly more non- \phonetic errors that the children. These errors included the substitution of whole   words (straight for scratch) and of inflected endings (ed or ing). The adults scored higher than children on word features which are related to knowledge of visual patterns and common spelling conventions (fight not fite). A development spelling pattern emerged which though stronger in children than in adults, was present in both groups.

On Gender

Arrington (1987) of Purdue University conducted   a   study to determine the strength of the relationships between field independence/dependence, visualization and problem solving in adolescent males and females. Results include that FI subjects with high visualization scored higher than FD subjects with low visualization on both problem-solving measures, that males were found to be more FI than females, that males   scored   higher   than females on the embedded figures task, and that the relationship between PPST and the GEFT were highly correlated for other spatial/perceptual ability tasks.

Kohlbrenner (1988) of Syracuse University conducted an experimental study on hemispheric specialization, a nation which suggests that left and right sides of the brain

are specialized to control different aspects of behavior. The study explored the patterns of hemispheric specialization in children whose IQ's are 130 and above. Subjects were matched by <u>gender</u>, handedness, grade level and socioeconomic status. Results revealed that as a group, the high IQ subjects did not differ significantly from controls in type or degree of lateralization as measured by the four dependent measures. These suggest that a typical lateralization seems to be more prevalent at the lower end of the IQ continuum. Although differences between the two groups were not found, gender related differences were demonstrated. On the self report measure, boys reported a stronger right-side preference that did the girls. Tannen (1990) and others, have found that males place more value in conversational interaction, on status and report talk, competing for more cooperative and facilitative conversationalists, concerned for their partner's positive face needs (Holmes 1991:20).

Brown (1988) conducted a study to investigate the relationship between background, sex, and cognitive profile with success in computer programming among college freshmen. The study showed a strong correlation between Type I cognitive profile (analytic ability or alternatively field independence) and success in computer programming. Background was shown to have some effect on the success in computer programming also, but not as pronounced as that of cognitive profile. There were no measurable gender differences.

Nah (1989) examined the relationship between learning style and place of residence, gender, and academic achievement of Korean Language, mathematics,

English, and social studies and science. Results revealed, among others, that males and females were not different as regards field independence nor on the cognitive skill.

Margolis (1990) of Harvard University who conducted a study on psychology of gender and academic discourse, a comparison between female and male students' experiences talking in the college classroom concluded: 1.) that women's sense of self-in-relation to others conflicts with the distanced and detached terms of academic discourse, 2.) that traditional academic discourse devalues women's social reality, 3.) that male students' concerns were individually oriented, centering on projecting an image of confidence, while females students' concerns were relational, oriented towards interconnection with others; 4.) that females often saw themselves as having to monitor their preferred ways of speaking in order to succeed in the academic discipline, and 5.) that while male students did not describe a self between their sense of self and who they must become to participate in classroom discussions. The accepted norms and values of academic discourse are more hospitable to males' preferred speech patterns.

Ross' (1994) study on cognitive style and academic achievement involving gender seems to favor females in contrast to the three previous studies done by Arrington, Kohlbrenner, and Margolis. Ross who investigated cognitive predictors of academic success for African high-school students, found among others, that there were some gender differences: achievement and classification as more thinking were associated with female gender, and that higher class was related to a more analytic

perceptual style.

Froehle (1990) of Indiana University conducted a study on correlates of EEG hemispheric integration. Within the individual, dichotomies exist which if balanced and integrated can increase personal development. The present research explored which contribute to the integration between brain hemispheres. The study examined preferred modes of information processing, meditation history, gender, age, occupation orientation, education level, and handedness and their relationship to the magnitude of interhemispheric differences. Results indicate that hemispheric integration is most strongly associated with being female and with having a low preference for right-hemispheric information processing.

On Area Of Specialization

In 1981, Tamondong – Diaz, who studied intercorrelations among personality variables and performance of high school students enrolled at the Pangasinan State University, College of Agriculture, San Carlos City concluded, among others: 1.) that mental ability (a traditionally left – brain function) is a good predictor of performance in vocational courses and related subjects and 2.) that emotional maturity (a traditionally right-brain function) is related significantly to performance in vocational courses and related subjects.

Bowlin (1988) of the University of Pittsburg conducted a study to identify in high school seniors any relationship that may exist between field-dependent/

independent cognitive styles and the research variables, namely: sex, IQ, academic achievement, curriculum track selection, and hemispheric preference. Analysis of results included, among others, that there is no significant relationship between scores on the field-independence for males and females, between curriculum track selection, as well as hemispheric preference or performance.

In Korzak's (1988) study about the influence of Hatha Yoga on nasal laterality among Yoga practitioners, it was revealed that Yoga practices alter not only the nasal cycle towards balance but also cerebral hemispheric functioning. This result provides support for Ross's (1983) argument that "differences between deaf and hearing individuals in hemispheric advantage may be due to differences on modes of processing, rather than to differences in underlying brain organization" (p.309).

Gonzales (1989) who studied the correlation between the admission requirement to the nursing course of Ateneo de Zamboanga and academic and clinical performance of the graduates revealed, among others, that NCEE reasoning ability and reading comprehension had a positive but not significant relationship with academic performance and that there is a significant relationship between NCEE, GSA and clinical performance.

Dumadag (1994) who studied the problem comprehension of Senior High School students in Zamboanga City found, among others, that grade in English III and

attitudes toward Mathematics significantly correlated (R = 0.40, and 0.17, respectively) with the level of comprehension.

C. Summary Of Related Literature And Studies

  <u>**On Hemispheric Dominance And Related Cognitive Style**</u>
  <u>**Of Field Independence - Dependence**</u>

Steinberg's (1993) topics on the physical feature of the brain, hemispheric dominance and brain lateralization; Munzert's (1980) and Levy's (1985) articles on hemisphericity; Brandwein and Ornstein's (1977) report about their experiment on the left and right brain functioning of healthy ordinary persons; Torrance's (1980) research review on personality factors and language proficiency; Mundel-Atherstone's (1989) review on cerebral dominance and language functions; Barss' (1992) article on the relation between dominance and speaking ability; and studies on hemisphericity and related cognitive style of field-independence/dependence done by Hall (1987), Witten (1989), Martin (1990), Borgert (1990), Rosa (1991), Cheng (1991), Martin, L. (1992) Martin, S. (1992), Rodriguez (1992), Sicat (1992), Kini (1993) and Staehler (1993) have strengthened the basis of the study – the Neurofunctional Theory asserting the relation of neural anatomy and language function and have brought to the fore the need of pursuing the present study which will render the following possible contribution to the vast theory; the relationship of hemispheric dominance to the four macro skills of language vis-à-vis age, gender and area of specialization of students to better guide students' learning.

On English Language Proficiency

The discussed theories about language proficiency like Chomsky's (1965) Linguistic Theory; Hymes' (1972) et. al. Communicative Competence; Canale and Swain's (1985) Theory of Communicative Competence; Cummins Theory of Language Proficiency; Oller's (1979) Unitary Competence, Divisibility and Partial Divisibility Hypotheses; together with the provisions of the 1987 Constitution on the English language, Gonzales' (1981) review on the Bilingual Education policy, Ramos' (1994) speech on the importance of empowering Filipino people with English, Pascasio's (1981) article on the need of revitalizing the English language in the tertiary level, Lopez's (1981) report on the perceived deterioration on the English language in Philippine colleges and universities, Mundel- Athertone's (1989) research review on hemisphericity and language function and the studies which included English proficiency by Rojas (1987), Tabacug (1990), Vegare (1993), Silorio (1996), and Marmoleño (1996) had in a way given the present study a "spotlight" as it were, that enabled the researcher to see why the variable of English proficiency had to be included and how it was to be viewed and treated with other variables in the study.

On Age

Yorio's (1976) Classification Of Learner Variables, The Critical Period Theory, Brown's (1994) quoted explanation on the different aspects of a second language learned at different ages, Appel and Muysken's (1987) opinion on the

individuals' progress in second language acquisition, Hawkin's (1987) and Kapadia's (1987) studies on the predictors of academic achievement mentioning "age" as one and Viise's (1992) study on child and illiterate adult spelling development have given clarification and confirmation on the researcher's decision to include "age" variable in the present study.

On Gender

The discussed articles telling significant/insignificant differences and relationships between hemispheric dominance, related cognitive style of filed independence/dependence and sex; Arrington's (1987) study on the relationship between field independence/ dependence, visualization and problem solving in adolescent males and females; Kohlbrenner's (1988) experimental study on hemispheric specialization and aspects of behavior taking into account other variables including gender; Margolis' (1990) study about language and gender; Ross' (1994) research on cognitive style and academic achievement involving gender; Froehle's (1990) study on the correlates of EEG hemispheric integration; Brown's (1988) investigation on the relationship of background, sex and cognitive profile with success in computer programming among college freshmen and Nah's (1989) study on the relationship between learning style and place of residence, gender and academic achievement of Korean language and other subjects have given the researcher an idea to include the variable of "sex".

On Area Of Specialization

The theory on Learner Variables by Yorio (1976), Krashen's Input Hypothesis, Munzert's assertion on the importance of learning and mental experience, Piaget's Mental Structures Hypothesis, Stage Hypothesis, Tamondong-Diaz's (1981) study on the intercorrelations between personality variables and performance of high school students in vocational courses, Bowlin's (1988) study on the relationship between field independence/dependence cognitive styles and the research variables which included curriculum track selection and hermispheric preference, Korzak's (1988) study about the influence of Hatha Yoga on nasal laterality, Gonzales' (1989) study which concluded correlation between NCEE reasoning ability and reading comprehension with academic and clinical performance of nursing students and Dumadag's (1994) correlational study on the level of problem comprehension of senior high school students in Zamboanga City and research variables which included grade in English III and attitudes toward Mathematics have pushed forward the researcher's initial idea of including "area of specialization" as one research variable applicable in the present study.

Conceptual Framework

The related literature and studies discussed above have helped shape the conceptual framework that serves as the guide of the present study. The conceptual paradigm of the current research consists of three boxes. The first box presents the independent variable which is the hemispheric dominance of the respondents. The

second contains the dependent variable- the English proficiency in its four macro skills and global level. The opposing arrows that join *hemispheric dominance* and *English proficiency* show that the two variables are related with each other. The last box which is placed in the lower mid-portion contains the moderating variables of age, gender, and area of specialization and is connected by an upward arrow to the one- stemmed arrows joining the two major variables – i.e. the hemispheric dominance and the English proficiency. This upward arrow means that the relationship between hemispheric dominance and English proficiency of the respondents is influenced by their age, gender and area of specialization.

In graphic form, the relationship among these variables is shown in Figure 1.

Figure 1

The Conceptual Paradigm
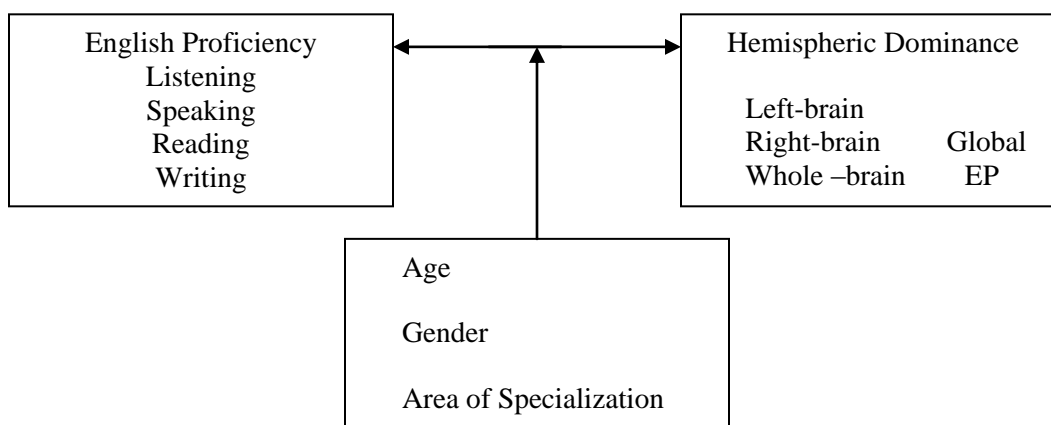
Research Hypotheses

1. There is a significant correlation between the respondents' hemispheric dominance and their English proficiency score in each of the four macro skills:

    a. Listening   c. Reading

    b. Speaking   d. Writing

2. There is a significant correlation between the respondents' hemispheric dominance and their global English proficiency score.

3. There is a significant correlation between hemispheric dominance and English proficiency score when respondents are grouped according to:

    a. Age

    b. Gender and

    c. Area of Specialization

Definition of Terms

To ensure a clear understanding of the words used in this study, the following terms are operationally defined:

<u>Age</u>. In this study *age* refers to the respondents' biological ages categorized into four groups as follows: 1.) 16 and below, 2.) 17-18, 3.) 19-20, and 4.) 21 and above.

Area of Specialization. This refers to the respondents' present courses namely: Liberal Arts, Education and Engineering.

Gender. The term *gender* refers to the respondents' sex classified as ":male" or "female".

Global English proficiency score. This means the respondents' overall score in the five English tests namely: Listening Comprehension Test, Speaking Skill Test, Reading Comprehension Test, Writing Skill Test and Cloze Test.

Hemispheric Dominance. In this study, it refers to the respondents' cerebral preference in the processing of information which is categorized into three namely: 1.) left- brain dominance 2.) right- brain dominance and 3.) whole- brain dominance or bilateral or "middle-of-the-road" performers.

Language Proficiency Levels. This is the term used to refer to the respondents' average scores with equivalent performance rating as "Excellent", "Very good", "Good", "Fair", "Passing" or "Failing" in the four macro skills of listening, speaking, reading and writing skills based on the WMSU Grading System (WMSU Code 1994).

Macro Skills. This term refers to listening, speaking, reading and writing, the four components of language proficiency.

WMSU College Students. These refer to the respondents of the study who are first to fourth year students of the Colleges of Arts and Sciences, Engineering and Education enrolled during the first semester of School Year 1999-2000.

CHAPTER III

RESEARCH METHODOLOGY AND PROCEDURES

This chapter discusses the research methodology and procedures of the study. It covers six specific topics: the research design, the research locale, the respondents, the instruments, the data gathering procedure and the statistical treatment. The discussion of the said topics is done sequentially as presented.

Research Design

This study employed the descriptive method, specifically the correlation technique. Two hundred forty (240) sampled respondents from the Colleges of Arts and Sciences, Education, and Engineering were used in this study. First, the respondents' hemispheric dominance in information processing was determined through the use of the Hemispheric Dominance Test (HDT). Then, their English Proficiency (EP) was measured by the use of the five instruments: the Listening Comprehension Test (LCT), the Reading Comprehension Test (RCT), the Speaking Skill Test (SST), the Writing Skill Test (WST), and the Cloze Test (CT). The first four instruments were for the macro skills and all the five for the global/ overall English Proficiency. After that, the respondents' scores in HDT and in the EP tests, both in the macro and the global levels were correlated. In addition, the respondents were also classified according to their age, gender and area of specialization. Lastly, these learner

variables were again correlated with their relationship between hemispheric dominance and English Proficiency.

Research Locale

Western Mindanao State University, the venue of the present study, is the only state university in Region IX. It's tuition and other fees are very much affordable by the majority of the region's populace   and the quality of education it offers is generally good. As a matter of matter, in 1998 it ranked 6th among the 68 universities, both private and public, throughout the country (Sun Star Zamboanga, Sept. 10, 1998), and this year it has been categorized "Level 4" among   the state universities and colleges. In addition, its College   of Education   has been chosen the Center of Excellence for Teacher Education in the region.

On account of this background,   more and more students from the different places in the region and nearby cities especially those from the low- income families pursue their college education in WMSU.   These students with varied family backgrounds and   experiences   are expected to possess differing individual learning styles.

Respondents of the Study

The study had a population of five thousand ninety- six (5,096) first to fourth year students from the three colleges of WMSU, namely; College of Arts and Sciences or CAS (2,184), College of Education or CED (1,096) and College of

Engineering and Technology or CET (1,816) mostly enrolled in English subjects during the School Year 1999- 2000.

The inclusion of the three Colleges of Arts and Sciences, Education and Engineering was based on the Split- Brain Theory and studies. The Arts and Sciences students who are expected to be analytic and good in language were used to represent the left- brained individuals. The Engineering students, although are expected to be good in logic and mathematics, were used to represent the right- brained because most of them are males; since according to some studies on gender and hemisphericity, males have thicker right brain hemispheres than females. In addition, they are also expected to be global, good in creative work and in space manipulation; whereas, the Education students who are expected to be both analytic and global, and good in both verbal and non- verbal activities were used to represent the whole – brained individuals.

Using the lists of students of the three participating colleges, the 240 respondents of the study were selected through the use of stratified, purposive and random sampling techniques. Stratified sampling was used when respondents were taken from each of the four year levels and placed in the four age strata of: 1.) 16 and below, 2.) 17-18, 3.) 19-20, and 4.) 21 and above. Purposive sampling was employed when 20 students were purposively taken from each year level of every college in order to have a manageable sample size in terms of the researcher's resources. Then, simple random sampling, particularly lottery, was used in the actual selection of the 20 respondents per year level to give each concerned student equal chance to be chosen,

thus ensuring objectivity.   The   table below shows the respondents of the study distributed by area of specialization, age and sex.

Table 1

Distribution of Respondents by Area of Specialization, Age and Sex

Area of Specialization	AGE				SEX		Total
	16 & below	17-18	19-20	21 & above	Male	Female	
1. Arts and Sciences	11	29	37	3	11	69	80
2. Education	7	33	31	9	22	58	80
3. Engineering	11	33	30	6	57	23	80
TOTAL	**29**	**95**	**98**	**18**	**90**	**150**	**240**

Research Instruments

There were six tests in the study. These were the Hemispheric Dominance Test (HDT), the four macro skill tests of language proficiency namely: the Listening Comprehension Test (LCT),   the Reading Comprehension Test (RCT), the Speaking Skill Test (SST),   the Writing Skill Test (WST), and the Cloze Test (CT) for the global or overall test of language proficiency.

A. The Hemispheric Dominance Test (HDT)

Preparation. The Hemispheric Dominance Test (HDT) was a test on the

respondents' learning styles in terms of brain dominance in information processing. It was used to determine whether a respondent was left- brained, right- brained or whole brained. It was composed of 40 items most of which were lifted from the standardized 39- item Brain Dominance Inventory (by an unknown author) revised by Evelyn C. Davis of UP Open University, and a few adapted from another standardized 20- item *Left- Right Brain Dominance Test* by Brown (1994). Moreover, the simplicity of some terms used in the test was a contribution of the RYE Quiz cerebral dominance (Repro Watch Youth Edition, March 1-31, 1999).

Each of the 40- items was followed by three possible answers lettered **a,b,** and **c**. All **"a"** answers described the attitude of the left- brained learners, all the **b's** spoke of the behavior of the right- brained while all the c's described that of the whole brained or bilateral learners.

The HDT had an accompanying *answer sheet* which contained: 1.) slots for respondent's age, sex and area of specialization – other variables needed in the study and 2.) 40 numbers each followed by letters **a, b,** and **c**. It was on the answer sheet where respondents were asked to encircle the letters of their choice for they were not allowed to write anything on the test questionnaire. On the lower portion of the answer sheet were three blanks for the respondents' **a, b** and **c** scores.

Pilot-Testing. Since the HDT was an adaptation of the two standardized cerebral dominance tests, it did not anymore undergo validation and test of reliability. It

was however pilot- tested in an English class, not part of the study for its intelligibility, clarity of instructions and time allotment determination.

Administration. The HDT was given with the Cloze Test in the first meeting of each group of 20 respondents. For every group, the HDT was administered in a usual classroom setting by only one proctor who was a CAS faculty member. In this test, each respondent was given a test sheet containing 40 multiple − choice type items and an answer sheet where he encircled the letters of his choice.

Scoring. The scoring of the Hemispheric Dominance Test followed the scoring procedure of the *Brain Dominance Inventory* presented below.

**BRAIN DOMINANCE
INVENTORY SCORING
(By an unknown author)**

No. of a's _____ No. of b's _____ No. of c's _____
Your **a'**s, **b'**s, and **c'**s must total 40, or your score is incorrect.

1. Compute: Divide your **b** score minus your **a** score by three. It can be a minus or plus answer: _____
2. If your score is 17 or higher, divide your **b** minus **a** score by two. Round your score to the nearest number. The answer will be your score.
   OR
   If your **c** score is from 10 to 16, divide your **b** minus **a** score by two. Round your score to the nearest number. The answer will be your score. It can be a minus or plus answer. _____
   OR
   If your c score is less than 10, do not divide at all. Your **b** minus **a** score is your answer. _____

3. NOW PLOT YOUR SCORE BELOW.

Score	*Laterality*
0	Whole – brain dominance (bilateral)
-1 to -3	Slight preference toward toward the left
-4 to -6	Moderate preference toward the left
-7 to -9	Left- brain dominant
-10 to -11	Left- brain dominant (very strong)
+1 to +3	Slight preference toward the right
+4 to +6	Moderate preference for the right
+7 to +9	Right-brain dominant
-10 to +11	Right- brain dominant (very strong)

B. The Cloze Test (CT)

Preparation. The written Cloze Test was used to measure the respondents' global or overall proficiency in English. It was a researcher- made test constructed on a four – paragraph passage about "Asia" taken from "History of the Asian Nations" (Tensuan – Leogardo and Leogardo Jr., 1991). The passage had been modified by the deletion of every 7th word starting with the third sentence. It had 35 missing words to supply.

Validation and Reliability Test. The Cloze Test was validated by a panel of three experts; two of them are "Ph. D. in Linguistics degree" holders and one, a holder of "Ed. D. Major in English" degree. Then, it was pilot- tested in the English class used in pilot- testing the HDT. After that, it underwent a reliability test using Kuder- Richardson formula 21. The test found the said instrument reliable (60%) at *L* .05.

Administration.As mentioned earlier, the Cloze Test was given with the HDT in the first meeting of each group of 20 respondents. It was administered by the same proctor assigned in HDT who followed the same seating arrangement. In the test, each respondent was given a three- page CT test sheet which was at the same time the answer sheet. It was on the same sheet where the subjects supplied the missing words or acceptable words to complete the passage about Asia. The respondents were given 30 minutes to finish the test excluding listening to directions and example.

Scoring. The Cloze Test was checked by only one CAS English professor and scored by giving one (1) point for every correct answer. The correct answer was either the exact word or any acceptable word being supplied so long as the idea of the passage was not altered. The perfect score was "35", and the lowest possible score was "0".

C. The Listening Comprehension Test (LCT)

Preparation. The Listening Comprehension Test was a 35- item tape-recorded test used to measure the respondents' ability to understand spoken English. It was composed of three parts with special directions for each part. Part A contained 15 sentences that respondents would hear from the tape recorder one at a time and would answer by choosing the correct answers printed on a test sheet. Part B consisted of 10 short dialogues between two speakers that subjects would hear. After each dialogue, a

comprehension question was to be answered by selecting the correct response from the four printed choices, Part C contained 2 long talks to be heard from the tape recorder. After each long talk, followed 5 comprehension questions that respondents would answer by choosing the correct ones from the sets of 4 printed choices.

The LCT test sheet had an accompanying answer sheet where respondents would blacken the circles under the letters of their choice.

All the sentences short dialogues and long talks with the corresponding comprehension questions and sets of possible answers were lifted from the standardized LCT of TOEFL (or Test of English as a Foreign Language) by Qui Zhong and Sullivan (1990). A closely similar test had been used by Tabacug in her study entitled "Socio- Psychological Distance and Proficiency in Chavacano, Filipino and English among Tausog, Subanen and Cebuano College Students of WMSU, Zamboanga City" (Tabacug, 1990).

Since the tape of the TOEFL LCT was not available, it was reproduced by requesting two speech teachers of the College of Arts and Sciences, WMSU to read the adapted tapescript for recording.   To produce broadcast quality output, the recording was done at the radio station, specifically at the DXMR Radio Ng Bayan Station, Baliwasan, Zamboanga City. After the recording, the recorded test was edited.

Validation and Reliability Test. The produced tape was validated by a panel of

three speech teachers. Apart from that, the researcher had this heard by the adviser, an expert in oral discourse. Pilot- testing of the LCT was done in the same English class the one used in pilot- testing the HDT and CT. Since the tape was locally produced, the LCT was made to undergo reliability test using the Kuder- Richardson formula 21, which found this instrument reliable (73%) at L .05.

Administration. The LCT with the RCT was given in the second meeting of each group of 20 respondents. It was administered with the assistance if a proctor who helped prepare the testing paraphernalia at the CAS Masscom Production Room or the Psychology Laboratory Room which was a conducive venue for the test.

In this test, 20 respondents were asked to sit in a circle, each of them equidistant from the tape recorder which was placed in the center. Then, each was given a test sheet containing 35 sets of possible answers and an answer sheet where he would blacken the circles under the letters corresponding to his answers. As soon as everybody had the test and answer sheet, the tape recorder from where the respondents would hear the recorded sentences, short dialogues and long talks was played only once. After each sentence, short dialogue and conversation heard, comprehension questions were asked and the respondents answered the questions by choosing one from each set of 4 choices given on the test sheet and by blackening the circles under the letters of their choice on their sheets. For every question, the respondents were given 12 seconds to answer. The whole LCT was conducted in 30 minutes to include the reading of the directions and examples.

Scoring. The Listening Comprehension Test was scored by giving one (1) point for every correct answer. The highest possible score was "35", and the lowest possible score was "0".

D. The Reading Comprehension Test (RCT)

Preparation. The Reading Comprehension Test (RCT) was a 35- item test used to measure the respondents' ability to understand written English. It was composed of eight (8) passages, four (4) of which with the corresponding comprehension questions and possible answers were lifted from *Gates – MacGuinete Standardized Test* (1965) used by Raquel (1989) and Sicat (1992); the other four (4) passages with their corresponding questions and possible answers were lifted from the standardized TOEFL Reading Comprehension Test (1990). The Gates – MacGuinete Standardized Test originally intended for Grade VI in the United States is still suited for the college year level in the Philippines, and the TOEFL RCT originally intended for non- native college graduates is still within the level of the upper college students in the Philippines. Since the respondents of the study were first to fourth year students, a combination of the two was necessary.

Pilot-Testing. Since the RCT was adaptation of the two standardized reading comprehension tests, it was not made to undergo validation and reliability tests. It was directly pilot – tested in the same English class for its intelligibility, clarity of directions,

time allotment determination and corrections for any unseen typographical errors. After the pilot-testing, reproduction of the final copies was done.

Administration. The RCT was given immediately after the LCT in the second meeting of each group of 20 respondents. It was administered by the same proctors in LCT at the same CAS Masscom Production Room or Psychology Laboratory Room. In this test, each of the respondents who remained in the circular seating arrangement was given a test sheet and an answer sheet where he recorded his answers by blackening the circle under the letter of his choice. This test was allotted 45 minutes to include reading of directions.

Scoring. The RCT was scored similarly with the LCT. Each correct answer was given one (1) point. Its highest possible score was "35", and its lowest possible score was "0".

E. The Speaking Skill Test (SST)

Preparation. The Speaking Skill Test (SST) was a picture – based brief story telling purposely to draw verbal responses. It was used to measure the respondent's ability to speak English on the spot using three different pictures taken from the computer (Windows 95, Clip Arts). The first picture presented a lady with a record- like material at her left arm and standing before the four executive – looking listeners; behind her was a writing board. The second picture showed a man and a

woman shaking hands and another elderly man in their midst; while the third picture showed a sailing yacht in a distance boarded by two persons. These pictures were chosen because of their familiarity among WMSU college students (See Appendix E).

This technique was patterned after the spontaneous speaking exercises during the "Echo Workshop – Seminar on Fluency Versus Accuracy" held at Ateneo de Zamboanga in 1992 conducted by Dr. Elenida Maizo. The same technique had also been employed in the two graduate researches done by Tabacug (1990) and Vegare (1993) in the same place of study.

Validation and Reliability Test. The SST was validated by a panel of three experts; two of whom are "Ph.D. in Linguistics degree" holders and one, a holder of the degree, Ed. D. Major in English. It was pilot – tested in the same English class and underwent reliability test using Kuder – Richardson formula 21. With the reliability coefficient of 74%, it was found reliable at L .05.

Administration.   The SST with the   Writing Skill   was given in the last and the longest meeting   of each group of 20 respondents. It was administered with the help of a   teacher assistant and   three judges or interraters   who are all   English professors of the   College of Arts and   Sciences. It was conducted in the Masscom Production Room or Psychology Laboratory Room for Liberal Arts and Engineering respondents and other times in a conducive room at the College of Education for Education respondents.   In this test, a special   seating arrangement   was followed. The 20

respondents were made to sit in a U- shaped arrangement facing the chalkboard; the 3

judges sat at the opening of the U, while the researcher as the proctor and time keeper

with the teacher assistant situated herself at the back of the 3 judges facing the

respondents.

When everybody was in place, the proctor gave the instructions and mechanics of

the test as follows: 1.) that each respondent/ speaker would be given seven minutes- three

minutes to study the pictures and mentally make a story about them, one minute to give

his story a tentative title, and three minutes for delivery; 2.) that the Speaking Skill Test

would be done in a clockwise or counter- clockwise direction and in a continuous

manner, so as not to waste time; 3.) that as soon the test would start, the first speaker

would be given a copy of the three pictures for him to prepare his story; 4.) that when the

first speaker would start narrating his story, the second speaker would be given a copy of

the pictures for him to also prepare his story; 5.) that the proctor would signal the speaker

if he would have one minute left to wind up narrations; and after the allotted time of three

minutes for actual speaking, the proctor would give another signal for the first speaker to

stop talking and at the same time for the second speaker to stand and narrate his story,

and for the teacher assistant to give the third speaker a copy of the three pictures for him

to prepare the same; 6.) that the same procedure would be followed up to the 20th/ last

speaker. After the giving of instructions and mechanics of the test, the SST proper started

and it ended after 2 hours and 20 minutes.

Scoring. During the Speaking Skill Test, each respondent's oral skill was rated by the three assigned judges. Each judge was provided with a score card to record his evaluation of the respondents' oral skill.

Below is Tabacug's modified score card, an adaptation of Cohen's oral testing (1981) and Stevenson's (1975), which she used in her study (See Tabacug, 1990) and was adopted in this study.

Judge No. _____   Speaking Skill Test
Respondents No. _____

Points to be Rated	Ratings				
1. Coherence in thought and ideas	1	2	3	4	5
2. Utilization of Strategies to convey message	1	2	3	4	5
3. More information bits used	1	2	3	4	5
4. Ease and naturalness of voice/ intonation	1	2	3	4	5
5. Overall story narration projection	1	2	3	4	5

Each judge encircled his rating according to this code:

"5" -------- Excellent

"4" -------- Very Good

"3" -------- Average

"2" -------- Fair

"1" -------- Poor

The Speaking Skill Test had a perfect score of "25" points and a lowest possible score of "0". Since there were three judges who rated each respondent's oral skill, each respondent's SST score was the computed average of the three scores.

F. The Writing Skill Test (WST)

Preparation. The Writing Skill Test (WST) was the last component of the EP test. It was used to measure the respondents' ability to write English correctly. It was a researcher- made narrative writing test based on the same pictures used in the SST which were taken from the computer.

As described earlier, the first picture showed a lady in her business attire, her left hand holding a record-like material, standing before the four executive- looking listeners. The second picture presented a young man and a woman shaking each other's hand, and an elderly man in their midst; while the third picture contained a yacht sailing in a distance and aboard it were two persons. These pictures were again used in this test for consistency sake since nearly the same set of criteria was used in both the SST and WST.

Validation and Reliability Test. The WST was validated by the same panel of experts who validated the SST. After it had been pilot- tested in the same English class used in pilot- testing all the other instruments, the WST was again tested for

reliability. Using Kuder – Richardson formula 21, it was found reliable (83%) at .05 level of significance.

Administration. As earlier mentioned, the WST was administered together with the SST in the last meeting of each group of 20 respondents. Right after the respondents' oral narrative task, they were asked to put into writing their brief stories. In this test, each respondent was again given a copy of the same pictures, a copy of the written instructions and a clean sheet of paper to write his story in 30 minutes. For the few who wanted to change their stories, they were allowed to do so provided they used the pictures.

Scoring. Each written output in the WST was rated by the same three English professors who had been assigned judges in the SST. In scoring the students' narrative compositions, the judges were made to use the same set of criteria used in the Speaking Skill Test, with only Number 4 being changed. The said WST score card was used as shown below.

Judge No. _____   Writing Skill Test
Respondent No. _____

Points to be Rated	Ratings				
1. Coherence in thought and ideas	1	2	3	4	5
2. Utilization of Strategies to convey message	1	2	3	4	5
3. More information bits used	1	2	3	4	5
4. Ease and naturalness of voice/ intonation	1	2	3	4	5
5. Overall story narration projection	1	2	3	4	5

Each judge encircled his rating according to the same code applied in the SST as follows: "5" – Excellent; "4"- Very Good; "3" – Average; "2" – Fair;"1" – Poor.

As reflected in the score card, the highest possible score was "25", and the lowest possible score, "0". Each respondent's WST score was the computed average of the scores given by the three judges.

Data Gathering Procedure

When all the six instruments had been completely prepared, the actual data gathering was done through the following procedure: First, permission to administer the six instruments was asked from the deans of three participating colleges. Second was to secure the lists of first to fourth year students who comprised the population of the study from the respective college secretaries. Third, using the lists and employing simple random sampling, 20 respondents were selected from each year level of every college involved. Fourth, the concerned teachers were informed of the schedules of the tests, and as approved by the deans, requested them to excuse from their classes the chosen respondents on the said schedules. Likewise, needed proctors and judges for the Speaking Skill Test and Writing Skill Test were contacted. Finally, proper administration of the six tests followed.

Since it was impossible to administer all the six tests to the 240 respondents at one time, a plan was devised and employed. The tests were given by two's – i.e. HDT and CT in the first meeting; the LCT and RCT in the second meeting; and the SST and

WST in the third meeting. Likewise, the 240 sample was divided into 12 small groups

of 20 respondents each, by year level and area of specialization. In short, each of the

12 subgroups was made to take the six tests in three separate meetings, totaling 36

meetings in all. This is shown in Table 2.

Table 2

Data Gathering Devised Plan

Group	Composition: Respondents By Year Level & Area of Specialization	Meeting		
		1st	2nd	3rd
1	20 1st year Arts & Sciences	HDT/CT	LCT/RCT	SST/WST
2	20 2nd year Arts & Sciences	HDT/CT	LCT/RCT	SST/WST
3	20 3rd year Arts & Sciences	HDT/CT	LCT/RCT	SST/WST
4	20 4th year Arts & Sciences	HDT/CT	LCT/RCT	SST/WST
5	20 1st year Engineering	HDT/CT	LCT/RCT	SST/WST
6	20 2nd year Engineering	HDT/CT	LCT/RCT	SST/WST
7	20 3rd year Engineering	HDT/CT	LCT/RCT	SST/WST
8	20 4th year Engineering	HDT/CT	LCT/RCT	SST/WST
9	20 1st year Education	HDT/CT	LCT/RCT	SST/WST
10	20 2nd year Education	HDT/CT	LCT/RCT	SST/WST
11	20 3rd year Education	HDT/CT	LCT/RCT	SST/WST
12	20 4th year Education	HDT/CT	LCT/RCT	SST/WST

Statistical Treatment

In the statistical analysis of data, this study used the following techniques and

methods:

Number. Number was used to indicate the frequencies of students belonging to

each hemispheric dominance category of "left-brained", "right-brained" or "whole-brained". It was also used in scoring students' test results.

Percentage. Percentage was used as descriptive statistics to show the proportion of students belonging to the three categories of the Hemispheric Dominance.

Mean. Mean was used to get the average scores in all the proficiency tests, namely: Listening Comprehension Test, Reading Comprehension Test, Speaking Skill Test, Writing Skill Test, and Cloze Test.

WMSU Grading System. The university grading system with grades as follows: 1.0-1.25 = excellent; 1.5-1.75 = very good; 2.0-2.25 = good; 2.5-2.75 = fair; 3.0 = passing or poor (WMSU Code 1994). This was used to describe the respondents' scores and English Proficiency levels in the four macro skills and global level.

Standard Deviation (SD). Standard Deviation was used to show the variability among the English proficiency scores in the four macro skills.

Pearson-Product Moment Correlation Coefficient (or Pearson r). Pearson r was used in solving for the correlation coefficients that would show the relationships between and among the following research variables: 1.) hemispheric dominance with English proficiency score in the macro and the global levels and 2.) the relationship of hemispheric dominance and English proficiency when respondents were grouped according to age, gender, and area of specialization.

CHAPTER IV

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter presents the data gathered from the 240 Western Mindanao State University college students enrolled during the first semester of School Year 1999-2000 by the use of the Hemispheric Dominance Test and English proficiency tests in the four macro skills of listening, speaking, reading and writing; and were analyzed by the use of descriptive statistics and the Pearson Product-Moment Correlation Coefficient (Pearson r). The presentation and analysis of the said data are done in the following order: 1.) Students' hemispheric dominance; 2.) Students' English proficiency scores in the four macro skills and global level by hemispheric dominance, age, gender and area of specialization which were qualitatively interpreted based on the standard 50/50 Transmutation Table in percentage and converted into the Grading System of Western Mindanao State University (WMSU Code, 1994); 3.) Correlation between respondents' hemispheric dominance and English proficiency in the four macro skills and global level, 4.) Correlation between respondents' hemispheric dominance and English proficiency in the four macro skills and global level when respondents were categorized according to age, gender and area of specialization.

Students' Hemispheric Dominance

Figure 2 presents the distribution of students in terms of hemispheric dominance - i.e. the left-brain dominance, the right-brain dominance and the

whole-brain dominance. The data   show that 74.6 percent of the 240 respondents belonged to the left-brain dominance,   21.3   percent   belonged to   the right-brain dominance and 3.8 percent to the whole-brain dominance category. These findings provide a strong indication that majority of the students enrolled during the first semester of   the   School Year 1999-2000 in the three Colleges of Arts and Sciences, Education and Engineering of Western   Mindanao State University were left-brained individuals and few were right-brained and whole-brained.

For a revisit, a summarized profile of the characteristics is presented for the readers to understand the general capabilities of each categorized brain-dominant individual.

The left-brained people tend to be verbal, to respond to word meaning, to be sequential, to process information linearly, to respond to logic, to plan ahead, to recall peoples' names, to speak with few gestures, to be punctual, to prefer formal study design and bright light while studying (Internet and Sperry, 1977).

The right-brained people, on the contrary, tend to be visual, tactual, and kinesthetic; to respond to word pitch and feeling; to be random; to process information in chunks; to respond to emotion; to be spontaneous; to recall peoples' faces; to use gestures when speaking; to be less punctual and to prefer sound/music background and frequent mobility while studying (Internet and Sperry, 1977).

While the whole-brained individuals are the "middle of the road," _ those who tend to balance using the left and the right brain in processing information and data for comprehension.

Figure 2

**Percentage Distribution of Respondents
By Hemispheric Dominance**

Left-brain Dominance
(74.6%)

Whole-brain Dominance
(3.8%)

Right-brain Dominance
(21.2%)
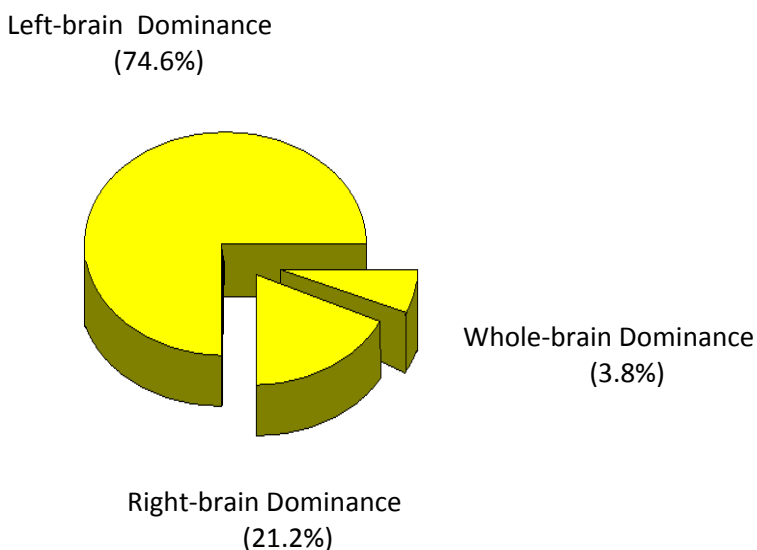
The whole-brained individuals tend to be verbal and at the same time tactual and kinesthetic; to respond to both word meaning and pitch of a song; to be both sequential and random; to process information either linearly or in chunks; to respond to both logic and emotion; to do things with advance planning or with no plans at all; to recall both peoples' names and faces; to talk either with few or many gestures; to be

either punctual or less punctual; to be at home with either formal or informal study design and to feel all right with either bright or dim light while studying.

Students' English Proficiency Scores In The
Four Macro Skills and Global Level

Table 3 presents the descriptive levels of the students' English proficiency scores in the four macro skills, namely: listening, speaking, reading and writing; and in the global level.

Table 3
Descriptive Levels of the Students' Proficiency Scores in the
Four Macro Skills and Global Level

English Proficiency	*n*	HPS	Mean	*sd*	Grade	Interpretation
A. Macro Skills						
Listening	240	35	21.22	5.07	2.5	Fair
Speaking	240	25	16.65	3.79	2.25	Good
Reading	240	35	17.37	4.95	3	Passing
Writing	240	25	14.04	3.36	2.75	Fair
B. Global	240	155	80.28	14.45	3	Passing

Macro Skills

The data reveal that the students' mean score in the Listening Comprehension Test was 21.22 which had an equivalent grade of 2.5 with a qualitative interpretation of being "fair". In the Speaking Skill Test, the students obtained an average score of

16.65 with a grade of 2.25 which meant "good". Their mean performance in the Reading Comprehension Test was 17.37 which had an equivalent grade of 3.0 which was considered "passing". They obtained an average score of 14.04 in the Writing Skill Test with a grade of 2.75 meaning "fair".

This result indicates that regardless of hemisphericity, the students' proficiency level in the four macro skills was generally low although the students showed a bit better performance in the Speaking Skill Test. This test used pictures as stimulus materials for the narrative task which in effect helped the students to verbally articulate their thoughts step by step.

Global English Proficiency

The data reveal that out of the total global English proficiency score of 155, the students got an average score of 80.28 points which had an equivalent grade of 3.0 meaning "passing". It implies that students' proficiency level in the global test of the English language was also low.

This result has somehow strengthened Vegare's (1993) finding that the overall language proficiency of the college students particularly the student teachers of Western Mindanao state University was poor.

**Students' English Proficiency Scores In The Four Macro Skills
And Global Level By Hemispheric Dominance**

The students' English proficiency scores in the four macro skills of listening,

speaking, reading, and writing; and in the global level in terms of hemispheric dominance

are presented in Table 4.

Table 4

**Students' English Proficiency Scores in the four Macro Skills
and Global Level By Hemispheric Dominance**

English Proficiency	n	Highest Possible Score	Student's Average Score	Grade	Standard Deviation	Interpre-tation
A. Listening	240	35	21.22	2.5	5.07	Fair
Left-brain Dominance	179	35	21.44	2.5	5.1	Fair
Whole-brain Dominance	52	35	21.02	2.5	4.45	Fair
Right-brain Dominance	9	35	18	3	5.29	Passing
B. Speaking	240	35	16.56	2.25	3.59	Good
Left-brain Dominance	179	35	16.84	2.25	3.66	Good
Whole-brain Dominance	52	35	15.8	2.5	3.21	Fair
Right-brain Dominance	9	35	15.42	2.5	3.91	Fair
C. Reading	240	35	17.53	3	4.87	Passing
Left-brain Dominance	179	35	17.44	3	5.08	Passing
Whole-brain Dominance	52	35	17.58	3	4.16	Passing
Right-brain Dominance	9	35	19.11	3	4.31	Passing
D. Writing	240	35	14.05	2.75	3.28	Fair
Left-brain Dominance	179	35	13.95	2.75	3.37	Fair
Whole-brain Dominance	52	35	14..26	2.75	2.99	Fair
Right-brain Dominance	9	35	15	2.5	3.45	Fair
E. Global	240	35	80.28	3	14.45	Passing
Left-brain Dominance	179	35	80.76	3	14.76	Passing
Whole-brain Dominance	52	35	79.02	3	13.79	Passing
Right-brain Dominance	9	35	77.87	3	12.32	Passing

Macro Skills

      <u>**A. Listening**</u>. It can be gleaned from the table that in the 35-item Listening Comprehension Test, the left-brain dominant students obtained a mean score of 21.44 with an equivalent grade of 2.5 which was considered "fair"; the right-brain dominant respondents got a mean score of 21.01 which also had a grade of 2.5 meaning "fair"; while the whole-brain dominant got a mean score of 18 which had an equivalent grade of 3.0, qualitatively interpreted as merely "passing".

      This indicates that in the Listening Comprehension Test, of the three groups, the left-brained got the highest, followed by the right-brained; while the whole-brained, the lowest. However, considering the respondents' general performance level in the Listening skill Test, it is still low as indicated by the adjectival descriptions of "fair" and "passing".

      In terms of homogeneity in listening, it was the right-brained, who seemed to be the most homogeneous group as indicated by its smallest standard deviation of 4.45, followed by the left-brained, then the whole-brained, in that order.

      The result showing the respondents' low proficiency level in listening skill has somehow   supported the opinion of Alcantara and others   in their book entitled *Strategies   I   for the Teaching of the   Communication Arts: Listening, Speaking, Reading and Writing* that "of the four language skills, listening has been sadly

neglected." They say that after six or ten years of taking formal English, our students develop a certain degree of proficiency in reading and writing, but not in listening.

B. Speaking. In the second macro skill test of speaking, out of the total score of 25, the left-brained students obtained a mean score of 16.84 which had an equivalent grade of 2.25 meaning "good". The right-brained got a mean score of 15.8 with a grade of 2.5 which was considered "fair" and the whole-brained got 15.42 as the mean score, with a grade of 2.5, still "fair".

The data further reveal that the left-brain dominant students were better speakers than the right-brain or the whole-brain dominant students. On the other hand, they were slightly more heterogeneous in their speaking abilities compared to the right-brain dominant students as evidenced by their standard deviation of 3.66, bigger than that of the right-brained, but were slightly less heterogeneous when compared with the whole-brained who had a standard deviation of 3.91 showing a bit wider spread of scores.

This result revealing the left-brain dominant students' being better speakers than the right-brain dominant has been supported by Broca (1861) in Fromkin amd Rodman (1983) who strongly asserts that we speak with the left hemisphere.

C. Reading. In the Reading Comprehension Test, the data reveal that out of the 35 items, the left-brained students obtained a mean score of 17. 44 with a grade of

3.0 meaning "passing"; the right-brained got a mean score of 17.58 still with a grade of 3.0 which was also considered "passing"; and the whole-brained had a mean score of 19.11 with the same "passing" grade of 3.0. A closer inspection of the data suggests that the reading abilities of the three groups were similar as shown in their adjective description of "passing" according to the WMSU Grading System.

However, the data further imply that in reading, the whole-brained students performed the highest, followed by the right-brained; and then, the left-brained. The combined average score in reading of the right- brained and the whole-brained students still consistently reveals that the left-brained were the poorer readers and the right-brained or whole-brained were the better ones.

These reading abilities of the three groups were more clearly unveiled by the groups' standard deviations. The left-brained, for instance, who had the higher standard deviation of 5.08 showing a wide spread of abilities were more heterogeneous, while the right-brained and the whole-brained students who had standard deviations of 4.16 and 4.31, respectively, seemingly less scattered from the mean, were less heterogeneous.

This finding revealing that the right-brained/whole-brained students were the better readers while the left-brained, the poorer ones seems to support Torrance(1980) who includes (in his characterization of the two hemispheric dominance categories) that the right-brain dominant learners are synthesizing readers. This further supports Levy's

1985) report that patients with right brain damage had difficulties in drawing, using colored blocks to copy designs, reading and drawing maps, discriminating faces and in a variety of other visual and spatial tasks.

D. Writing. In the fourth macro skill test of writing, the data disclose that, out of the 25 total score, the left-brain dominant students got a mean score of 13.95 with a grade of 2.75 which was considered "fair". The right-brain dominant obtained a mean score of 14.26 which had the same grade of 2.75 meaning "fair", and the whole-brained had a mean score of 15 with a grade of 2.5 which still meant "fair".

The data further reveal that in writing, as in reading, the whole-brained got the highest performance, followed by the right-brained, and then, the left-brained. If the mean scores of the right-brained and the whole- brained students are combined, the result of 14.63 still implies that the right-brained or whole-brained students were the better writers than the left-brained.

This writing result implying the right-brained/whole-brained students' performing better in the Writing Skill Test than did the left-brained shows a contradiction to one of Brandwein and Ornstein's (1977) reported findings which implied that the subject of their first neuropsychological study was using his left-brain hemisphere when asked to write a letter.

To sum up the results in the four macro skill tests of listening, speaking, reading and writing, the left-brained students were the better listeners and speakers while the right-brained or whole-brained were the better readers and writers.

The level of performance in the four macro skills shows which group tended to do better, but on the whole there is so much to be desired; there is much still to be improved. A performance of "good" only in speaking and a big portion of "fair" and merely "passing" in the other language skills would somehow urge us to look into the curricular experiences students undergo, the kind of materials they review, as well as the teachers' methodologies to enhance students' learning capabilities.

It is seen that the right-brained and whole-brained students tended to do better in reading and writing, which account for the fact that where they are to express freely (in writing) predict or read between the lines (as in reading) these students would do better than the left-brained. It can also be summarized that the starting skills of listening and speaking with organized; step-by-step instructions mostly would appeal to left-brained students.

Global English Proficiency

The global score of English proficiency was the combined scores in the listening, speaking, reading, writing and cloze tests which totaled 155 points.   As shown in Table 4, out of the 155 global total score,   the left-brain dominant students

got 80.76 points with an equivalent grade of 3.0 which meant "passing". The right-brained students got an average global score of 79.02 which also had a grade of 3.0 meaning "passing", and the whole-brained got an average global score of 77.87, still having the same "passing" grade of 3.0.

Although the global mean scores of the three groups had the same qualitative interpretation of "passing" based on the WMSU Grading System, they were still different as their values reveal. The values of their mean scores reveal that the left-brained students were the better performers in the global/overall test of English proficiency than the right-brained or whole-brained as evidenced by their mean score which was 3.26 higher than the median value of 77.5. However, this global performance of the left-brained was not really the whole picture of the group as shown by its biggest standard deviation of 14.76 showing a wide spread of scores. It means that the left-brained were the most heterogeneous group, followed closely by the right-brained, and finally the whole-brained.

**Students' English Proficiency Scores In The Four
Macro Skills And Global Level By Age**

Table 5 presents the students' macro and global English proficiency scores by age groups, such as: "16 years old and above"; "17 and 18 years old"; "19 and 20 years old"; and "21 years old and above".

Table 5
Students' English Proficiency Scores in the Four Macro
Skills and Global Level by Age Group

Age Group	n	Listening			Speaking			Reading			Writing			Global		
		x	Grade	Inter-pretation	x	Grade	Inter-pretation	x	Grade	Inter-Pretation	x	Grade	Inter-pretation	x	Grade	Inter-pretation
16 yrs. old & below	28	12.1			14.84			19.03			15.83			81.52		
LB	21	22.19	2.25	Good	16.48	2.5	Fair	19.05	3	Passing	15.1	2.5	Fair	82.93	3	Passing
RB	7	20	2.75	Fair	13.2	3	Passing	19	3	Passing	16.63	2.25	Good	80.11	3	Passing
WB	0	-	-		-	-		-	-		-	-		-	-	
17 & 18 yrs. old	96	20.97			15.74			18.68			14.15			79.76		
LB	68	22.06	2.5	Fair	16.6	2.25	Good	16.99	5	Failing	13.84	2.75	Fair	80	3	Passing
RB	23	22.65	2.5	Fair	16.86	2.25	Good	18326	2.5	Fair	13.6	3	Passing	81.12	3	Passing
WB	5	18.2	3	Passing	13.76	3	Passing	20.8	2.25	Good	15	2.75	Fair	78.16	3	Passing
19 & 20 yrs. old	98	20.1			16.44			17.59			14.38			79.4		
LB	77	21.34	2.5	Fair	17.42	2.2	Good	17.79	3	Passing	14.15	2.75	Fair	82.38	3	Passing
RB	19	19.47	3	Passing	15.39	2.5	Fair	16.47	5	Failing	14.5	2.75	Fair	76.83	3	Passing
WB	2	19.5	3	Passing	16.5	2.25	Good	18.5	3	Passing	14.5	2.75	Fair	79	3	Passing
21 yrs. Old & above	18	18.07			16.7			15.55			13.08			73.98		
LB	13	17.54	3	Passing	15.27	2.5	Fair	15.15	5	Failing	11.54	5	Failing	71.73	5	Failing
RB	3	20.67	2.75	Fair	16.33	2.25	Good	16	5	Failing	12.2	5	Failing	74.2	5	Failing
WB	2	16	5	Failing	18.5	2	Good	15.5	5	Failing	15.5	2.5	Fair	76	3	Passing

Macro Skills

A. Listening. As shown in Table 5, in the Listening Comprehension Test, the "16- year old and above" students with left-brain dominance got a mean score of 22.19 with a grade of 2.25 which was considered "good". The right-brained "16 – year old and below" students obtained a mean score of 20 which had a grade of 2.75 meaning "fair"; while there were no whole-brained among the "16 – year old and below" students.

The data further indicate that between the two groups of "16- year old and below" students, the left-brained performed better than the right-brained.

In listening, for the age group of "17 and 18- year old" students, those with left-brain dominance obtained a mean score of 22.06 which had a grade of 2.25 meaning "good". The right-brained "17 and 18- year old" students got a mean score of 22.65 with a grade of 2.5 described as "fair"; while the whole-brained "17 and 18- year old" students got a mean score of 18.2 with an equivalent grade of 3.0 which was considered only "passing". The data imply that among the "17 and 18- year old students, the right-brained "17 and 18 years old" performed the highest, followed by the left-brained, and then, the whole-brained.

In the case of the "19 and 20- year old" students, the left-brained "19 and 20 years old" got a mean score of 21.34 which had a grade of 2.5 which meant "fair". The right-brained "19 and 20- year old" students obtained a mean score of 19.47 with an

equivalent grade of 3.0 described as "passing", and the whole-brained "19 and 20 years old" had a mean score of 19.5 which also had a grade of 3.0 meaning "passing". It implies that in listening among the "19 and 20- year old" students, those with left-brain dominance had the highest performance, followed by those with whole-brain dominance, and then, those with right-brain dominance, in that order.

For the last age group of "21- year old and above" students, out of the 35 total score in the Listening Comprehension Test, those with left-brain dominance had a mean score of 17.54 which had a grade of 3.0 qualitatively interpreted as "passing". The right-brained "21 years old and above" had a mean score of 20.67 with a grade of 2.75 meaning "fair" whereas, those with whole-brain dominance had a mean score of 16 with a grade of 5.0 meaning "failing". Among the three groups of "21- year old and above" students, as revealed, the right-brained performed the highest, followed by the left-brained, and last, the whole-brained.

Analysis of the data further reveals that in listening among the four age groups, the "16 - year old and below" students were the better performers, followed by the "17 and 18 years old"; then , the "19 and 20 years old"; and last, the "21 years old and above". This was evidenced by their combined mean scores of 21.10, 20.97, 20.10 and 18.07 respectively. In other words, the listening ability of the students decreased as their biological age increased.

B. Speaking. In the Speaking Skill Test of 25 points, the data reveal that the"16-year old and below" students with left-brain dominance had a mean score of 16.48 which had an equivalent grade of 2.5 which meant "fair". The right-brained "16- year old and below" students got a mean score of 13.2 with a grade of 3.0 meaning "passing". As shown, there were no right-brained among the "16- year old and below" students. Therefore, between the two, the left-brained "16- year old and below" students were better speakers than the right-brained.

In the case of the second age group of "17 and 18- year old" students, the data disclose that out of the 25-point Speaking Skill Test, the left-brained "17 and 18- year old" students got a mean score of 16.6 which had an equivalent grade of 2.25 which was considered "good". The right-brained "17 and 18 years old" had a mean score of 16.86 with a grade of 2.25 also described as "good"; while the whole-brained "17 and 18- year old" students got a mean score of only 13.76 with a grade of 3.0 meaning "passing". Of the three, the right-brained "17 and 18- year old" students got the highest performance in speaking, closely followed by the left-brained; then, the whole-brained, last.

For the third age group, in speaking, the "19 and 20- year old" students with left-brain dominance got a mean score of 17.42 which had a grade of 2.25 described as "good". Those with right-brain dominance got a mean score of 15.39 having a grade of 2.5 meaning "fair"; and those with whole-brain dominance obtained a mean score of 16.5 which had a grade of 2.25, qualitatively interpreted as "good". Of the "19 and 20- year

old" students, the left-brained "19 and 20- year old" performed the highest, followed by the whole-brained, and then, the right-brained, in that order.

With regard to the last age group of "21- year old and above" students, the data reveal that, in speaking, the "21- year old and above" students with left-brain dominance got a mean score of 15.27 having a grade of 2.5 which meant "fair". Those with right-brain dominance had a mean score of 16.33 with a grade of 2.25 which was considered " good"; and the whole-brained obtained a mean score of 18.5 which had a grade of 2.0 described as "good". Among the "21- year old and above" students, the whole-brained got the highest performance followed by the right-brained; then, the left-brained, last.

In summary, in the Speaking Skill Test, the data further imply that the "21- year old and above" students performed the highest; the "19 and 20 years old", the second highest; the "17 and 18 years old", the next; and the "16 years old and below", the last. This was supported by their group mean scores of 16.7, 16.44, 15.74 and 14.84 respectively, in the descending order - i.e. from the oldest to the youngest group. This means that as the students became older, their speaking ability grew sharper, exactly opposite to the Listening Comprehension Test result.

C.Reading. In the macro skill test of reading, the data show that out of the 35 items, the "16 -year old and below" students with left-brain dominance had a mean score of 19.05   with a grade of 3.0 which meant "passing". Those with right-brain

dominance got a mean score of 19 which had the same "passing" grade of 3.0. In short, the "16 –year old and below" students were all poor readers.

In regard to the "17 and 18- year old" respondents, the data reveal that, in reading, the left-brained "17 and 18- year old" students got a mean score of 16.99 with a "failing" grade of 5.0. The right-brained "17 and 18 years old" obtained a mean score of 18.26 with only a" passing" grade of 3.0; whereas, the whole-brained "17 and 18 years old" got a mean score of 20.8 with a grade of 2.75 meaning "fair". This implies that the "17 and 18-year old" students were very poor in reading as evidenced by their mean grade of 3.58, a failure.

Focusing on the "19 and 20- year old" students, the data show that those with left-brain dominance got a mean score of 17.79 with a grade of 3.0 which meant "passing". The right-brained "19 and 20 years old" had a mean score of 16.47 with a grade of 5.0 described as a "failure"; and the whole-brained "19 and 20 years old" got a mean score of 18.5 with a grade of 3.0 meaning "passing". In other words, like the previous group, the "19 and 20- year old" students were also very poor in reading as evidenced by their mean grade of 3.67, which is still considered a failure.

For the last age group of "21- year old and above" students, the data disclose that the left-brained "21- year old and above" students got a mean score of 15.15 with a failing " grade of 5.0. The right-brained "21- year old and above" students had a mean score of 16 still with a "failing" grade of 5.0; and the whole-brained "21 years old and

above" got a mean score of 15.5 also having a "failing" grade of 5.0. In short, the "21-year old and above" students were also very poor readers.

To sum up the results in the Reading Comprehension Test, the "16- year old and below" students performed the highest; the "17 and 18 years old" the second highest; the "19 and 20 years old" the next; and the "21 years old and above" the last. This was supported by their group mean scores of 19.03, 18.68, 17.59 and 15.55, respectively. This means that the older the students, the poorer readers they became.

A decrease in students' reading performance as they increase in chronological age may be due to lack of exposure to the things around them through educational field trips, emersion programs and similar activities that may help them acquire more knowledge of the world. As the Schema Theory in Reading posits, individuals can understand faster and better reading materials if they have the schema (or background knowledge) about them. This further implies that the role of the language teachers should be to improve/enrich students' prior knowledge by giving them more and more diversified reading materials that match students' hemispheric dominance.

It can be recalled that this disturbing result does not happen only in the tertiary level. Marmoleño (1999) who conducted a study on the reading performance among the Ateneo de Zamboanga Grade School students   revealed among others, that as the students' grade level increased, their reading proficiency level decreased.

D. Writing. In the Writing Skill Test of 25 points, as presented in Table 5, the "16- year old and below" students with left-brain dominance got a mean score of 15.1 which had a grade of 2.5 meaning "fair". The right-brained "16- year old and below" students obtained a mean score of 16.63 having a grade of 2.25 which was described as "good". Since there were no whole-brained among the "16- year old and below" students, the discussion was focused on the two. Between them, the right-brained "16-year old and below" students were better writers than the left-brained of the same age bracket. As one, the "16- year old and below" students' writing proficiency was fair; meaning, it was neither good nor poor.

Talking about the "17 and 18- year old" students, the data show that the left-brained "17 and 18- year old" students got a mean score of 13.84 with a grade of 2.75 which meant "fair". The right-brained "17 and 18 years old" obtained a mean score of 13.6 with a "passing" grade of 3.0; and the whole-brained got a mean score of 15 with a grade of 2.5 which was described as "fair". In short, for writing skills, the whole-brained "17 and 18- year old" students came out the highest performers, followed by the left-brained; and then, the right-brained.

In the case of the "19 and 20- year old" students, those with left-brain dominance obtained a mean score of 14.15 with a grade of 2.75 which was considered "fair". Those with right-brain dominance had a mean score of 14.5 with the same grade of 2.75 which meant "fair"; and those with whole-brain dominance got the same mean score of 14.5 with the same grade of 2.75 described as "fair". Therefore, the "19 and 20- year old"

students got only "fair" performance in writing as evidenced by their mean grade of 2.75. This means that their writing proficiency level was neither good nor poor.

The data about the last age group of "21- year old and above" students in writing reveal that the left-brained "21 years old and above" got a mean score of 11.54 which had a grade of 5.0 described as "failing". The right-brained "21 years old and above" had a mean score of 12.2 still having a "failing" grade of 5.0; while the whole-brained "21 years old and above" obtained a mean score of 15.5 with a grade of 2.5 meaning "fair". These data mean that, in writing, among the "21- year old and above" students, those with whole-brain dominance got the highest, followed by those with right-brain dominance, and then, those with left-brain dominance. But taken as one, "21- year old and above" students were very poor writers as evidenced by their mean grade of 4.17, a failure.

As a summary, in the macro skill test of writing, among the brain dominance groups according to age, the top three were: the right-brained "16- year old and below" students (16.63), the whole-brained "21- year old and above" (15.5) and the left-brained "16- year old and below" students (15.1).

Global English Proficiency

Out of the 155 total score in the global/overall English proficiency test,

the "16-year old and below" students with left-brain dominance got a mean score of 82.93 which had a grade of 3.0, just "passing". The right-brained "16-year old and below" students obtained a mean score of 80.11 with the same "passing" grade of 3.0. Although their global mean scores had similar grade based on the WMSU Grading System, their values reveal that the left-brained "16 years old and below" performed higher than the right-brained.

For the "17 and 18- year old" students, the data disclose that out of the 155 global total score, the left-brained "17 and 18- year old" students got 80 as the mean score with a grade of 3.0 which meant "passing". The right-brained "17 and 18 years old" obtained a mean score of 81.12 with the same grade of 3.0 meaning "passing"; and the whole-brained "17 and 18 years old" got a mean score of 78.16, having the same "passing" grade of 3.0. This means that the global or overall English proficiency level of the "17 and 18-year old" students was low, as evidenced by their group mean score of 79.76 which was only 2.26 higher than one-half of the total score.

Focusing on the "19 and 20- year old" students, the data reveal that out of the global total score of 155, the "19 and 20- year old" students with left-brain dominance obtained a mean score of 82.38 with a grade of 3.0 which meant "passing". Those with right-brain dominance got a mean score of 76.83 which also had a grade of 3.0 described as "passing"; and those with whole-brain dominance got a mean score of 79, still having a "passing" grade of 3.0. These data imply that the "19 and 20- year old" students were poor in the global/overall English proficiency.

In the case of the "21- year old and above" students, the data disclose that out of the global total score of 155 points, the left-brained "21- year old and above" students got a mean score of 71.73 which had a grade of 5.0 which meant "failing". The right-brained "21 years old and above" obtained a mean score of 74.2 with the same "failing" grade of 5.0; and the whole-brained "21 years old and above" got a mean score of 76 with a grade of 3.0 described as "passing". In short, the global English proficiency of the "21- year old and above" students was very poor as evidenced by their mean grade of 4.33 which is a failure.

To sum up, although all of the four age groups obtained poor performance in the global level of English proficiency, the "16- year old and below" students appeared to be the highest performers of the four, followed by the "17 and 18 years old"; next, the "19 and 20 years old"; then, the last, were the "21- year old and above" students. This was evidenced by their group mean scores of 81.52, 79.76, 79.40 and 73.98, respectively, in descending order. Considering the brain dominance groupings, the left-brained "16 years old and below" prevailed as the better performers than any other respondents. This further implies an inversely proportional relationship between the students' global English proficiency and age. It means that the college students' global/overall English proficiency decreased as their age increased. This is a disturbing and intriguing result that needs further research.

**Students' English Proficiency In The Four Macro
Skills And Global Level By Gender**

The students' English proficiency scores in the four macro skills and global level in terms of gender are presented in Table 6.

Macro Skills

<u>**A. Listening**</u>. It can be gleaned from the table that in the Listening Comprehension Test of 35 items, the males with left-brain dominance got a mean score of 21.69 with an equivalent grade of 2.5 which was considered "fair". The right-brained males obtained a mean score of 21.43 still with a grade of 2.5 meaning "fair"; and the whole-brained male students had a mean score of 17.5 which had a grade of 3.0 described as "passing". Among the males, in listening, the data indicate that the left-brained tended to be the highest performers, followed by the right-brained, and then, the whole-brained, in that order.

Likewise, the data about the females in the Listening Comprehension Test reveal that the females with left-brain dominance got a mean score of 21.29 which had a grade of 2.5 considered "fair". Those females with right-brain dominance got a mean score of 20.69 with the same grade of 2.5 meaning "fair"; and those with whole-brain dominance obtained a mean score of 18.14 with a grade of 3.0 which was described as "passing". In short, in listening among the females, those with left-brain

Table 6

**Students' English Proficiency Scores in the Four Macro
Skills and Global Level By Gender**

Sex	n	Listening			Speaking			Reading			Writing			Global		
		x	Grade	Inter-pretation	x	Grade	Inter-pretation	x	Grade	Inter-pretation	x	Grade	Inter-pretation	x	Grade	Inter-pretation
Male	90	20.16			15.41			16.98			13.65			77.05		
LB	65	21.69	2.5	Fair	15.96	2.25	Good	16.31	5	Failing	13.33	3	Passing	78.36	3	Passing
RB	23	21.43	2.5	Fair	15.77	2.5	Fair	16.52	5	Failing	14.12	2.75	Fair	78.29	3	Passing
WB	2	17.5	3	Passing	14.5	2.75	Fair	18	3	Passing	13.5	3	Passing	74.5	5	Failing
Female	150	20.04			16.28			18.64			14.7			80.19		
LB	68	21.29	2.5	Fair	17.34	2.25	Good	18.64	3	Passing	14.3	2.75	Fair	82.14	3	Passing
RB	23	20.69	2.5	Fair	15.82	2.5	Fair	18.41	3	Passing	14.37	2.75	Fair	79.6	3	Passing
WB	5	18.14	3	Passing	15.68	2.5	Fair	19.43	2.75	Fair	15.43	2.5	Fair	78.83	3	Passing

dominance got the highest performance, followed by those with right-brain dominance, then last, those with whole-brain dominance.

The analysis of the data further implies that, in listening, between the two groups in terms of gender, the males were very slightly better than the females as evidenced   by the males' mean   score   which   was 0.12 points higher than their counterpart. As one, however, the listening proficiency of the males and females was fair as evidenced by their mean grade of 2.75.

B. Speaking. In the Speaking Skill Test of 25 points, the data show that the left-brained male students got a mean score of 15.96 with a grade of 2.25 which was considered "good". The right-brained males got a mean score of 15.77 with a grade of 2.5 meaning   "fair"; and the whole-brained males got a mean score of 14.5 which had a grade of 2.75, still described as "fair". This means that, in speaking, of the three, the left-brained males were the highest performers, followed by the right-brained males, then, the whole-brained.

Focusing on the performance of the females in the Speaking Skill Test, the data disclose that out of the total score of 25, the left-brained females got a mean score of 17.34 with a grade of 2.25 which was qualitatively interpreted as "good". The right-brained females obtained a mean score of 15.82 which had a grade of 2.5 meaning "fair"; and   the whole-brained females   got a mean score of   15.68 with a grade of 2.5

described as "fair". Therefore, in speaking, among the females, the left-brained performed the highest, followed by the right-brained, and last, the whole-brained.

Comparing the two groups in terms of gender in the macro skill test of speaking, the females were better speakers than the males. This was evidenced by their group mean scores of 16.28 and 15.41 respectively. This finding is just in consonance with the females' natural characteristic of being more talkative and expressive than males.

C. Reading. In the third macro skill test of reading, as presented in Table 6, the left-brained males got a mean score of 16.31 which had a grade of 5.0 which meant failing". The right-brained males obtained a mean score of 16.62 with a "failing" grade of 5.0; whereas the whole-brained males obtained a mean score of 18 which had a grade of 3.0 described as "passing". In reading therefore, among the males, those with whole-brain dominance performed the highest, followed by those with right-brain dominance and last, those with left-brain dominance.

In regard to the females in the Reading comprehension Test of 35 items, the data reveal that the left-brained females obtained a mean score of 18.09 which had a grade of 3.0 which meant "passing". The right-brained females got a mean score of 18.41 still with a "passing" grade of 3.0; and the whole-brained females had a mean score of 19.43   with a grade of 2.75, qualitatively interpreted as "fair". This further implies that, in reading, among the three groups of females, the whole-brained females performed the highest, followed by the right-brained, and last, the left-brained.

In summary, the data further reveal that between the two, the females were better readers than the males. This was supported by their group mean scores of 18.64 and 16.98, respectively.

D. Writing. It can be gleaned from the table that in the Writing Skill Test of 25 points, the left-brained males got a mean score of 13.33 which had a grade of 3.0 considered "passing". The right-brained males got a mean score of 14.12 with a grade of 2.75 described as "fair"; and the   whole-brained males obtained a mean score of 13.5 with a grade of 3.0 which meant "passing". In short, the data reveal that in writing, among the three male groups, the right-brained males got the highest, followed by the whole-brained males, and the left-brained, last.

Focusing on the performance of the females in writing, the data disclose that the females with left-brain dominance obtained a mean score of 14.3 which had a grade of 2.75 which meant "fair". Those with right-brain dominance got a mean score of 14.37 with a grade of 2.75 which meant "fair"; and the whole-brained females had a mean score of 15.43 with grade of 2.5 which was considered "fair". This further reveals that, in writing among the females, those with whole-dominance got the highest, followed   by those   with   right-brain   dominance,   and then, those   with left-brain dominance. However, taken as one, the females' writing proficiency level was "fair", as evidenced by their mean grade of 2.67.

In conclusion therefore, in the Writing Skill Test between the males and females, it   was   the females that came out a bit better writers than the males, as

evidenced by the females' mean grade which was .25 higher than that of the males. Again, this result is a contribution to the overall observation/study that girls do better in languages/proficiency tests while boys do good in logic.

The performance levels however, for both males and females and whatever brain categories they belong were low which need much improvement.

Global English Proficiency

In the global/overall English proficiency, the data reveal that out of the total score of 155, the left-brained males obtained a mean score of 78.36 with grade of 3.0 which meant "passing". The right-brained males got a mean score of 78.29 which had the same "passing" grade of 3.0; and the whole-brained males had a mean score of 74.5 which had a grade of 5.0, qualitatively interpreted as "failing". This further indicates that in the global level of English proficiency, the left-brained males performed the highest, followed by the right-brained males, and then, the whole-brained, last. If taken as one, the males' global English proficiency level was very low as evidenced by their mean grade of 3.67 which meant failing.

In the case of the females, the data disclose that in the global level of English proficiency, the left-brained females got a mean score of 82.14 with a grade of 3.0 which meant "passing". The right-brained females obtained a mean score of 79.6 with the same "passing" grade of 3.0, and the whole-brained females had a mean score of

78.83 which also had an equivalent grade of 3.0 which was considered "passing". In short, the global English proficiency of the females was still low since their mean grade of 3.0 translated as "passing" or "poor". Considering their hemispheric grouping, however, their mean score values indicate that females with left-brain dominance were the highest performers, followed by those with right-brain dominance, and then, those with whole-brain dominance.

In totality, in the global test of English proficiency, the females came out the better performers than the males, as evidenced by their group mean scores of 80.19 and 77.05, respectively.

**Students' English Proficiency Scores In The Four Macro
Skills And Global Level By Area Of Specialization**

Table 7 presents the respondents' English proficiency scores in the four macro skills and global level according to area of specialization, namely: Arts and Sciences, Engineering and Education courses. Students in each course were grouped by hemispheric dominance, as follows: the Arts and Sciences students were grouped into 65 left-brained, 13 right-brained and 2 whole-brained; the Engineering students into 55 left-brained, 24 right-brained and 1 whole-brained; and the Education students into left-brained, 14 right-brained and 6 whole-brained totaling 80 students for each course.

Table 7

Students' English Proficiency Scores in the Four Macro
Skills and Global Level By Area of Specialization

Area Of Specialization	n	Listening			Speaking			Reading			Writing			Global		
		x	Grade	Inter-pretation	x	Grade	Inter-Pretation	x	Grade	Inter-pretation	x	Grade	Inter-pretation	X	Grade	Inter-pretation
Arts & Sciences	80	20.34			16.62			19.16			16.18			83.3		
LB	65	20.45	2.75	Fair	17.19	2.25	Good	17.65	3	Passing	14.08	2.75	Fair	79.27	3	Passing
RB	13	19.08	3	Passing	15.17	2.5	Fair	18.23	3	Passing	13.97	3	Passing	77.14	3	Passing
WB	2	21.5	2.5	Fair	17.5	2	Good	21.6	2.5	Fair	20.5	1.5	V. Good	93.5	2.5	Fair
Engineering	80	19.66			13.07			1.27			13.62			76.16		
LB	55	521.82	2.5	Fair	15.91	2.5	Fair	16.73	5	Failing	13.82	3	Passing	77.52	3	Passing
RB	24	21.17	2.5	Fair	15	2.5	Fair	16.80	5	Failing	14.03	2.75	Fair	75.66	5	Failing
WB	1	16	5	Failing	8.3	5	Failing	25	2	Good	14	2.75	Fair	75.3	5	Failing
Education	80	20.58			17.01			18.18			14.38			81.3		
LB	60	22.2	2.5	Fair	17.28	2	Good	17.98	3	Passing	14.82	2.75	Fair	85.48	2.75	Fair
RB	14	22.36	2.5	Fair	17.84	2	Good	19.07	3	Passing	15	2.5	Fair	85.34	2.75	Fair
WB	6	17.17	3	Passing	15.92	2.5	Fair	17.5	3	Passing	13.33	3	Passing	73.08	5	Fair

Macro Skills

A. Listening. The data reveal that in the Listening Comprehension Test of 35 items, the Arts and Sciences students with left-brain dominance had a mean score of 20.45 with a grade of 2.75, considered as "fair". The right-brained Arts and Sciences students got a mean score of 19.08 with a grade of 3.0 which was qualitatively interpreted as "passing" and the whole-brained Arts and Sciences students had a mean score of 21.5 which meant "fair". This further reveals that, in listening, among the three groups of the Arts and Sciences students, those with whole-brain dominance obtained the highest performance, followed by those with left-brain dominance, and then, those with right-brain dominance, last.

For the Engineering students, the data show that, in listening, the left-brained students got a mean score of 21.82 with grade of 2.5 which meant "fair". The right-brained obtained a mean score of 21.17 which had a grade of 2.5, considered "fair"; and the whole-brained got a mean score of 16 having a grade of 5.0 which meant "failing". As just presented, among the Engineering students, those with left-brain dominance performed the highest in listening, followed by those with right-brain dominance, and then, the one with whole-brain dominance, last.

In the case of the Education students, the data about their performance in the Listening Comprehension Test reveal that the left-brained Education students obtained a mean score of 22.2 with a grade of 2.5 which meant "fair". The right-brained got a

mean score of 22.36 with a grade of 2.5 which was considered "fair"; whereas the whole-brained had a mean score of 17.17 having a grade of 3.0 described as " passing". Among the Education students, therefore, those with right-brain dominance came out the highest performers in listening, followed by those with left-brain dominance; and then, those with whole-brain dominance, last.

In summary, among the three groups of students by course, the Education students got the highest performance in the Listening Comprehension Test, followed by the Arts and Sciences students, and then, the Engineering students.

B. Speaking. In the Speaking Skill Test of 25 points, the data disclose that the left-brained Arts and Sciences students got a mean score of 17.19 with a grade of 2.25 which was considered "good". The right-brained students had a mean score of 15.17 having a grade of 2.5 which meant "fair"; and the whole-brained respondents obtained a mean score of 17.5 with an equivalent grade of 2.0 meaning "good". From these data it was concluded that, of the Arts and Sciences students, those with whole-brain dominance performed the highest, followed by those with left-brain dominance, and then, those with right-brain dominance.

In regard to the Engineering students, it can be gleaned from the table that in speaking, the left-brained Engineering students had a mean score of 15.91 with an equivalent grade of 2.5 which was interpreted as "fair". The right-brained students got a mean score of 15 which had the same grade of 2.5 meaning "fair"; whereas, the

whole-brained had a mean score of 8.3 having a grade of 5.0 which was considered "failing". Of the Engineering students, the data further imply that in speaking, those with left-brain dominance performed the highest, followed by those with right-brain dominance, and then last, those with whole-brain dominance.

The data about the performance of the Education students in speaking disclose that the left-brained Education students got a mean score of 17.28 with a grade of 2.0 which was described as "good". The right-brained students had a mean score of 17.84 with the same grade of 2.0 which meant   "good", and the whole-brained   students obtained a mean score of 15.92 having a grade of 2.5 which was considered "fair". Among the Education students, the data further indicate   that those with right-brain dominance got the highest performance in speaking, followed by those with left-brain dominance, and then, those with whole-brain dominance, last.

The analysis of the data further implies that among the three groups of students according to course, the Education students were the best speakers, followed by the Arts and Sciences, and then, the Engineering students, in that order. This was evidenced by their group mean scores of 17.01, 16.62 and 13.07, respectively.

C. Reading.   In the macro skill test of reading, the data disclose that the Arts and Sciences students with left-brain dominance got a mean score of 17.65 with a grade of 3.0 which meant "passing". Those with right-brain dominance had a mean score of 18.23 with the same "passing" grade of 3.0; and those with whole-brain dominance had

a mean score of 21.6 with a grade of 2.5 meaning "fair". The data further reveal that in reading among the Arts and Sciences students, the whole-brained performed the highest, followed by the right-brained and then, the left-brained, last.

For the Engineering students, as shown in Table 7, the left-brained got a mean score of 16.73 with a "failing" grade of 5.0. The right-brained students obtained a mean score of 16.08 with the same "failing" grade of 5.0; but the whole-brained had a mean score of 25 which had an equivalent grade of 2.0, considered "good". Although all the results were low, it can be concluded that the right-brained and the whole-brained Engineering students combined as one, were better readers as evidenced by their combined mean score, than the left-brained students of the same course.

In the case of the Education students, the data reveal that out of the Reading Comprehension Test score of 35 points, the left-brained students got a mean score of 17.98 with a grade of 3.0 which meant "passing". The right-brained obtained a mean score of 19.07 which had the same "passing" grade of 3.0; and the whole-brained had a mean score of 17.5 still having the same "passing" grade of 3.0. These data further imply that the Education students, taken together, were poor readers as evidenced by their mean grade of 3.0, meaning just "passing"; but as individual groups, the right-brained students obtained the highest performance in reading, followed by the left-brained, and then, the whole-brained of the same course.

To sum up the reading results, the Engineering students appeared to be the highest performers in the Reading comprehension Test, followed by the Arts and Sciences students, and then, the Education students, last. This was evidenced by their group mean scores of 19.27, 19.16 and 18.18, respectively.

D. Writing. In the Writing Skill Test of 25 points, the data reveal that the left-brained Arts and Sciences students obtained a mean score of 14.08 with a grade of 2.75 which meant "fair". The right-brained students got a mean score of 13.97 with a grade of 3.0 which was considered "passing"; whereas, the whole-brained garnered a mean   score of 20.5 with an equivalent grade of 1.5 qualitatively interpreted as "very good". This further implies that among the Arts and Sciences respondents, those with whole-brain dominance were the best writers, followed by those with left-brain dominance, and then, those with right-brain dominance.

In regard to the Engineering students, the data about the Writing Skill Test disclose that the left-brained Engineering students got a mean score of 12.82 with a grade of 3.0 which meant "passing". The right-brained students had a mean score of 14.03 with a grade of 2.75 which was described as "fair"; and the whole-brained   got a mean score of 14 which also had a grade of 2.75, meaning "fair". Among the Engineering students the data further imply that the right-brained and the whole-brained students, put together, were better writers than the left-brained Engineering students.

Focusing on the performance of the Education students in the Writing Skill Test,

the data reveal that the left-brained Education students got a mean score of 14.82 with a grade of 2.75 which was considered "fair". The right-brained students obtained a mean score of 15 which had a grade of 2.5 described as "fair"; whereas the whole-brained students got a mean score of 13.33 with a "passing" grade of 3.0. This further indicates that among the Education students as evidenced by their mean scores, the right-brained students got the highest performance in writing, followed by the left-brained, and then, the whole-brained of the same course.

To summarize the results in the Writing Skill Test, among the students of the three courses involved, the Arts and Sciences students were the best writers, followed by the Education students, and then, the Engineering students, last. This was supported by their group mean scores of 16.18, 14.38 and 13.62, respectively.

Global English Proficiency

It can be gleaned from the table that out of the global total score of 155, the left-brained Arts and Sciences students got a mean score of 79.27 which had a grade of 3.0 which meant "passing". The right-brained students got a mean score of 77.14 with the same "passing" grade of 3.0; whereas the whole-brained students obtained a mean score of 93.5 which had a grade of 2.5, meaning "fair". In short, among the Arts and Sciences students, the whole-brained got the highest performance, followed by the left-brained, and then, the right-brained, last. Taken as one, the Arts and Sciences students'

global English proficiency was around "fair" or a little above "poor" as evidenced by their mean grade of 2.83.

For the Engineering students, the data on the global/overall English proficiency reveal that the left-brained students got a mean score of 77.52 with a "passing" grade of 3.0. The right-brained students had a mean score of 75.66 with a "failing" grade of 5.0; and the whole-brained got a mean score of 75.3 still with a "failing" grade of 5.0. In other words, the global English proficiency of the Engineering students, taken together, was very poor. By hemispheric grouping, the Engineering students with left-brain dominance performed higher compared with the two _ the right-brained and the whole-brained, put together.

In the case of the Education students' performance in the global test of English proficiency, the data reveal that the students with left-brain dominance obtained a mean score of 85.48 with a grade of 2.75 which meant "fair". Those with right-brain dominance got a mean score of 85.34 with a grade of 2.75 which was considered "fair"; whereas those with whole-brain dominance obtained a mean score of 73.08 with a "failing" grade of 5.0. These data further imply that among the Education students, the left-brained got the highest in the global test of English proficiency, followed by the right-brained, and then, the whole-brained. However, as a group, the Education students performed poorly in the global/overall English proficiency test as evidenced by their group mean score of 81.3 which meant just "passing".

As a summary, in the global test of English proficiency, among the students from the three colleges involved, the Arts and Sciences students performed the highest, followed by the Education students, and then, the Engineering students, in that order. This was evidenced by their group mean scores of 83.30, 81.3 and 76.16, respectively.

**Correlation Between The Respondents' Hemispheric Dominance
And English Proficiency In The Four Macro Skills**

The correlation results between the respondents' hemispheric dominance and English proficiency in the four macro skills are presented in Table 8.

Table 8

**Correlation Results Between the Respondents' Hemispheric Dominance
And English Proficiency in the Four Macro Skills**

English Proficiency Macro Skill	n	df	Computed Value of r	Critical value of r at 0.05	Interpretation
Listening	240	238	-0.1057	0.164	Not Significant
Speaking	240	238	-0.1316	0.164	Not Significant
Reading	240	238	0.0496	0.164	Not Significant
Writing	240	238	0.0663	0.164	Not Significant

A. Hemispheric Dominance and Listening Skill. Pearson r correlation analysis reveals that students' hemispheric dominance was negatively correlated with their listening skill as shown by their computed value of r of -0.1057. Although the degree of correlation was not statistically significant at 0.05 level of significance, the

result implies that if a student has a left-brain dominance, it is more likely that he will obtain higher score in a test measuring his listening skill; whereas, if a student has a right-brain or whole-brain dominance, there is a greater tendency that he will get lower score in the same test.

B. Hemispheric Dominance and Speaking Skill. Between hemispheric dominance and speaking skill, the data reveal that students' hemispheric dominance was negatively but not significantly correlated with their speaking skill test result as evidenced by the computed value of r of -0.1316 against the critical value of r of 0.164 at 0.05 level of significance. This finding means that if a student is left-brained, he tends to get higher score in the speaking skill test; if he is right-brained or whole-brained, he tends to get lower score in the same test.

C. Hemispheric Dominance and Reading Skill. The correlation analysis further reveals that the students' hemispheric dominance was positively correlated with their reading skill as shown by the computed value of r of 0.0496 which is lesser than the critical value of r of 0.164. Even if the degree of the correlation was not statistically significant at 0.05 level of significance, the result indicates that students with right-brain or whole-brain dominance will likely get higher score in reading test, while those with left-brain dominance will likely get lower score in the same reading test.

This result is somehow a contradiction of Hall's (1987) findings which included a significant relationship between cognitive style and reading proficiency, that field-independence (a learning style which is closely related with left-brain dominance) was significantly related to proficiency in right word recognition, recognition of vocabulary in context, use of structure analysis on word recognition and silent reading comprehension, although these items were not individually treated in this study. The same result also contradicts one of Sicat's (1993) findings which revealed that proficiency in reading comprehension test was a function of field-independence, a cognitive style (or a learning style which is closely related with left-brain dominance, Brown 1994).

D.Hemispheric Dominance and Writing Skill. The analysis of the data also reveals that the students' hemispheric dominance was positively correlated with their writing skill as evidenced by the computed value of r of 0.0663. This implies that the right-brained or whole-brained students tended to get higher score in the writing skill test; whereas, the left-brained students tended to get lower score in the same test although the result was not statistically significant at 0.05 level of significance.

This finding has also opposed another finding of Sicat (1993) that proficiency in the written composition was a function of field-independence, a cognitive style (which is closely related with left-brain dominance). On the other hand, it has confirmed Breien-Pierson's (1988) study on the role of hemisphericity (in learning and hought-specially) in the area of student composition wherein Breien-Pierson found,

among others,   that   the right-brained   students approached the composing process in a

different manner than did the left-brained students and that the right-brained students

preferred free writing and creative writing, while the left-brained students enjoyed doing

research papers and book reports.

Correlation Between The Respondents' Hemispheric
Dominance And Global English Proficiency

Table 9 presents the correlation   result   between   students'   hemispheric

dominance and English proficiency in the global level.

Table 9

Correlation Results Between the Respondents' Hemispheric
Dominance and Global English Proficiency

English Proficiency	*n*	*df*	Computed Value of r	Critical value of r at 0.05	Interpretation
Global	240	238	-0.0593	0.164	Not Significant

In the case of the global English proficiency, the data disclose that students'

hemispheric dominance was negatively correlated with their global English proficiency.

Although the degree of correlation was not statistically significant at 0.05 level of

significance, the result implies that if a student is left-brained, it is more likely that he

will get higher scores in the global English; if a student is whole-brained or right-brained,

it is more likely that he will get lower scores in the global English. This can be supported

by   their   mean scores wherein the left-brained obtained a mean score of 80.76 in the

global English while the whole- brained and right-brained, combined got a mean score of 78.44 in the same test.

This finding about the left-brained students' tending to excel in the global test of English proficiency speaks of a reality about the present educational system in the classroom level. Research has revealed that many of today's teaching methods, materials and tests are highly analytic. Hence, they are biased against the right-brained (global) learners. No wonder that the right-brained tend to get lower scores in the overall English proficiency test because these learners find difficulty in learning analytically (Hermosa, 1996).

This result confirms Sicat's (1993) finding that proficiency in the cloze performance test (a test of global language proficiency) is a function of field-independence, a cognitive style (or a learning style which is closely related with left-brain dominance, Brown 1994).

Correlation Between The Respondents' Hemispheric Dominance And English Proficiency In The Four Macro Skills And Global level When Respondents Were Categorized According To Age Group

Table 10 presents the correlation results between respondents' hemispheric dominance and English proficiency in the four macro skills when they were categorized according to their age group.

A. Hemispheric Dominance and Listening Skill By Age Group. As shown in Table 10, the correlation results between students' hemispheric dominance and listening skill in terms of their ages revealed no significant correlation between the two.

Among the "16 year old and below" students, their hemispheric dominance was negatively but not significantly correlated with their listening skill as evidenced by the computed value of r of -0.1827 that is lesser than the critical value of

Table 10

Correlation Results Between the Respondents' Hemispheric Dominance and Each of the four Macro Skills and Global English Proficiency When Respondents were Categorized According to the Age Group

Age Group	n	Listening	Computed Value of r					Critical Value of r at 0.05 level	Interpre-tation
			Speaking	Reading	Writing	Global			
16 Years old & Below	28	-0.1827	-00.3474*	-0.0047	0.2281	-0.0763	0.317	*Significant
17 & 18 Years old	96	-0.0827	-0.0964	0.1751*	0.0312	0.0019	0.64	*Significant
19 & 20 Years old	98	-0.1647*	-0.208*	-0.0797	0.0471	-0.1717*	0.164	*Significant
21 Years old & Above	18	0.0098	0.3852	0.0558	0.3379	0.1019	0.4	All Not Sig.

r of 0.317 at 0.05 level of significance. Among the "17 and 18 years old", their hemispheric dominance was also negatively but not significantly correlated with the listening test result as shown by the smaller computed value of r of -0.0827 compared

with the critical value of r of 0.164. Nevertheless, among the "19 and 20 years old" students, their hemispheric dominance was negatively and significantly related with their listening skill. This was evidenced by their computed value of r of -0.1647 which is greater than the critical value of r of 0.164. Lastly, among the "21 years old and above" students, although their hemispheric dominance was positively correlated with their listening skill, the   degree of correlation was not statistically significant as evidenced by the computed value of r of 0.0098 which is lower than the critical value of r of 0.4.

Therefore, it can be deduced that hemispheric dominance had nothing to do with the listening skill when students were categorized according to their biological ages, except for students aged 19 and 20 years old where left-brained tended to be better listeners than the whole or right-brained students.

B. Hemispheric   Dominance   and Speaking Skill By Age Group. When students' hemispheric   dominance and speaking   skill were correlated, the results yielded different findings.

Among the "16 - year old and below" students, the hemispheric dominance was negatively and significantly correlated with their speaking skill as evidenced by the computed value of r of -0.3473 which is greater than the critical value of r of 0.317 at 0.0 5 level of significance. Among the "17 and 18- year old" students, their hemispheric dominance was negatively but not significantly related with their speaking skill. This is

indicated by the computed value of r of -0.0964 which is lesser than the critical value of r of 0.164. Among the "19 and 20 years old", their hemispheric dominance was negatively and significantly correlated with their speaking test result as shown by the computed value of r of -0.208 which is greater than the critical value of r of 0.164 at 0.05 level of significance. In the case of the last age group of "21 -year old and above" students, the data analysis discloses that their hemispheric dominance was positively but not significantly related with their speaking ability. This is manifested by the computed value of r of 0.3852 which is lesser than the critical value of r of 0.4.

To sum up, of the four age groups, the hemispheric dominance only of the "16- year old and below" and of the "19 and 20- year old" students had a significant negative relationship with their speaking skill. This implies that the "16- year old and below" and the "19 and 20- year old" students with left-brain dominance tended to get higher scores in the speaking skill test; whereas, those with right-brain or whole-brain dominance tended to get lower in the same test. For the rest of the age groups, their hemispheric dominance did not influence their speaking skills.

C. Hemispheric Dominance and Reading Skill By Age Group. When the correlation analysis was employed between hemispheric dominance and reading skill among students categorized according to their ages, it revealed varying outcomes.

The data reveal that hemispheric dominance among students aged 16 years old and below had a negative but not significant relationship with their reading skill as

supported by the computed value of r of 0.0047 which is lesser than the critical value of r of 0.317 at 0.05 level of significance. Among the "17 and 18 years old", their hemispheric dominance was positively and significantly correlated with their reading skill. This is shown by their computed value of r of 0.1751 which is greater than the critical value of r of 0.164 at 0.05 level of significance. Moreover, the degree of correlation between hemispheric dominance and reading skill among the "19 and 20 years old" students was -0.0797 which was not significant at 0.05 level of significance. Likewise, the hemispheric dominance among the students aged 21 years old and above was positively but not significantly related with their reading skill. This is indicated by the computed value of r of 0.0558 which is lesser than the critical value of r of 0.4 at 0.05 level of significance.

To sum up the above results, only the hemispheric dominance of the "17 and 18 years old" students had a positive and significant correlation with their reading skill. This means that the "17 and 18 years old" students with right-brain/whole-brain dominance tended to get higher scores in the reading test whereas, those with left-brain dominance tended to get lower scores in the same test. The findings imply that the right-brained or whole-brained "17 and 18 years old" had better reading ability than the left-brained. For all the other age groups, their hemispheric dominance did not have any bearing on their reading skills.

D. Hemispheric Dominance and Writing Skill By Age Group . The data reveal that there was a positive but not significant relationship between hemispheric

dominance and writing skill among the"16- year old and below" students with the computed value of r of 0.2281; among the "17 and 18- year old" students with the computed value of r of 0.0312; among the "19 and 20- year old" students with the computed value of r of 0.0471; and among the "21-year old and above" students with the computed value of r of 0.3379.

Therefore, for all the four age groups, hemispheric dominance was positively correlated with their writing skills. Although the degree of correlation obtained per group was not statistically significant, each correlation coefficient suggests that the right-brained or whole-brained students tended to be better writers; whereas, the left-brained tended to be poorer writers.

E. Hemispheric Dominance and Global English Proficiency By Age Group.

When the hemispheric dominance and global English proficiency of the students who were grouped according to their ages were correlated, the results revealed dissimilar relationships.

The data show that hemispheric dominance was negatively but insignificantly correlated with the global English proficiency among the "16 -year old and below" students with the computed value of r of -0.0763 which is lesser than the critical value of r of 0.317 at 0.5 level of significance. Among the "19 and 20- year old" students, the correlation was also negative but significant with the computed value of r of -0.1717 which is greater than the critical value of r of 0.164. However, hemispheric dominance

was found to have a positive but insignificant correlation with the global English proficiency among the "17 and 18-year old" students with the computed value of r of 0.0019, and among the "21-year old and above" students with the observed value of r of 0.1019.

To sum up, among the four age groups, the hemispheric dominance only of the "19 and 20 years old" students had a significant negative correlation with their global English Proficiency. This means that the left-brained "19 and 20- year old" students tended to get higher scores in the global test of English proficiency; whereas, the right-brained or whole-brained tended to get lower in the same test. For the rest of the age groups, their hemispheric dominance had nothing to do with their global English proficiency.

Correlation Between The Respondent's Hemispheric Dominance And Each Of The Four Macro Skills And Global English Proficiency When They Were Categorized According To Gender

The correlation results between the respondents' hemispheric dominance and each of the four macro skills and their global English proficiency when respondents were categorized according to gender are presented in Table 11.

A. Hemispheric Dominance and Listening Skill by Gender. As presented in Table 11, when students' hemispheric dominance and listening skill by gender were correlated, it was found out that the hemispheric dominance of both male and female

students was negatively but insignificantly correlated with their listening skill. This is indicated by the computed value of r of -0.0867 for males and -0.1162 for females where each correlation coefficient was lesser than the critical value of r of 0.164 at 0.05 level of significance. This implies that the left-brained males and females tended to be better listeners; whereas, the right-brained or whole-brained tended to be poorer listeners.

B. Hemispheric Dominance and Speaking Skill by Gender. When hemispheric dominance was correlated with the speaking skill among males and females, the analysis revealed insignificant negative relationships. For the male

Table 11

Correlation Results Between the Respondents' Hemispheric Dominance and English Proficiency In Each of the Four Macro Skills and Global Level When Respondents were Categorized According to Gender

Gender	n	Computed Value of r					Critical Value of r at 0.05 level	Interpre-Tation
		Listening	Speaking	Reading	Writing	Global		
Male	90	-0.0867	-0.0584	0.0413	0.1004	-0.0238	0.164	All Not Sig.
Female	150	-0.1162	-0.1638	0.0594	0.0533	-0.0751	0.164	All Not Sig.

students, the extent of the relationship was found to be -0.0584 and for the females, -0.1638 where each correlation coefficient is lesser than the critical value of r of 0.164 at .05 level of significance. This implies that the left-brained males and females were likely to get higher scores in the Speaking Skill Test; whereas the right-brained or whole-

brained of both genders were likely to get lower scores in the same test although this finding is not statistically significant.

C. Hemispheric Dominance and Reading Skill by Gender. The analysis shows that among the male students, the degree of the correlation was 0.0413; and among the female students, it was 0.0594. Since the critical value of r was 0.164 at 0.05 level of significance, the results show that there was no significant correlation between hemispheric dominance and reading ability among males and females. This means that hemispheric dominance did not affect the reading skill, although the data tend to show that the right-brained or whole-brained males and females were likely the better readers; whereas, the left-brained of both sexes were likely the poorer readers.

D. Hemispheric Dominance and Writing Skill by Gender. The data also reveal insignificant positive correlations between hemispheric dominance and writing skill among the males and females. Among the male students, the computed value of r was 0.1004, and among the females, the observed r value was 0.0533. Although the correlation results were not significant at 0.05 level of significance, the data seem to show that the right-brained or whole-brained male and female students tended to become better writers; whereas, the left-brained of both sexes tended to become poorer writers.

E. Hemispheric Dominance and Global English Proficiency by Gender.

When the hemispheric dominance scores of the male and female students were correlated with their global English proficiency scores, the results revealed insignificant negative relationships between the two variables. The computed value of r for males was -0.238 and for females, was -0.0751 against the critical value of r of 0.164 at 0.05 level of significance. The results imply that the left-brained males and females were likely to get higher scores in the global test of English proficiency; whereas the right-brained or whole-brained were likely to get lower scores in the same test, although this finding was not statistically significant.

This finding is somehow a confirmation of the earlier findings that there was no significant relationship between scores on the field-independence (a learning style which is closely related with left-brain dominance) for males and females, between curriculum track selection, as well as hemispheric preference or performance (Bowlin, 1988) and that males and females were not different as regards to field-independence (closely related with left-brain dominance) nor on the cognitive style (Nah, 1989).

Correlation Between The Respondents' Hemispheric Dominance And English Proficiency In Each Of The Four Macro Skills And Global Level When Respondents Were Categorized According To Area Of Specialization

The correlation results between respondents' hemispheric dominance and English proficiency in each of the four macro skills and global level when respondents

were categorized according to their area of specialization are shown in Table 12.

Table 12
Correlation Results Between the Respondents' Hemispheric Dominance and
English Proficiency In Each of the Four Macro Skills and Global Level
When Respondents were Categorized According to
Area of Specialization

| Area of Specialization | n | Listening | Computed Value of r | | | | Critical Value of r at 0.05 level | Interpre-tation |
			Speaking	Reading	Writing	Global		
CAS	80	-0.0515	-0.1268	0.0413	0.1534	0.046	0.183	All Not Sig.
Engineering	80	-0.1073	-0.2448*	0.0594	0.1907*	-0.0747	0.183	*Significant
Education	80	-0.2055	-0.05	0.0272	-0.0943	-0.0891	0.183	*Significant

A. Hemispheric Dominance and Listening Skills by Area of Specialization.

The correlation analysis between students' hemispheric dominance and listening skill by

area of specialization reveals insignificant negative relationships between the two

variables for all the three groups, namely: Arts and Sciences, Engineering and

Education students. This is indicated by the computed values of r of -0.0515, -

0.1073 and -0.2055, respectively, which are lesser than the critical value of r of 0.183 at

0.05 level of significance. This finding implies that the Arts and Sciences, Engineering

and Education students with left-brain dominance tended to be better listeners;

whereas, the right-brained or whole-brained of the same courses tended to be poorer

listeners, although this is not statistically significant.

B. Hemispheric Dominance and Speaking Skill by Area of Specialization.

When hemispheric dominance of the students from the three colleges were correlated

with their speaking skills, results yielded dissimilar relationships. For the " Arts and Sciences " students, their hemispheric dominance was negatively but insignificantly correlated with their speaking ability; for the " Engineering " respondents, there was a negative and significant relationship between their hemispheric dominance and their speaking proficiency; and, for the " Education " students, it showed a negative, but not statistically significant relationship with their speaking skill.

These findings are supported by their computed values of r of -0.1268, -0.2448 and -0.05, respectively, against the critical value of r of 0.183 at 0.05 level of significance. Among the three groups of students by course, therefore, only the Engineering students whose speaking skill was affected. This means that the left-brained Engineering students tended to become better speakers; whereas, the right-brained or whole-brained, poorer speakers.

C. Hemispheric Dominance and Reading Skill by Area of Specialization. The correlation results between the hemispheric dominance and reading ability of the respondents when grouped according to area of specialization revealed insignificant positive relationships. Among the "Arts and Sciences" students, the degree of correlation between hemispheric dominance and reading skill was 0.0413; among the Engineering, 0.0594; and among the Education students, 0.0272. Since these correlation coefficients are lesser than the critical value of r of 0.183, it can be inferred that the correlation between hemispheric dominance and reading when respondents were categorized according to their course is not significant. This means that hemispheric

dominance had nothing to do with their reading skills although the data tend to show that the right-brained or whole-brained students from the three colleges involved were likely to get higher scores in the Reading Comprehension Test; whereas the left-brained, lower scores in the same test.

This result is a bit related with Gonzales' (1989) study on the correlation between admission requirement and academic/clinical performance among nursing students although hemisphericity was never considered. The said study revealed, among others, that NCEE reasoning ability and reading comprehension had a positive but not significant relationship with academic performance and that there is a significant relationship between NCEE, GSA and clinical performance.

D. Hemispheric Dominance and Writing Skill by Area of Specialization. When hemispheric dominance and writing skill of the three groups of respondents by area of specialization were correlated, there were variations in their correlation coefficients. For the "Arts and Sciences" students, the degree of correlation between hemispheric dominance and writing skill was 0.1534; among the "Engineering" students, the extent of the relationship between hemispheric dominance and writing ability was 0.1907; and among the "Education" students, the correlation coefficient was -0.0943. Since the computed correlation coefficients for the "Arts and Sciences" and "Education" students were lesser than the critical value of r of 0.183 at 0.05 level of significance, it can be deduced that hemispheric dominance had no significant correlation with writing ability among the "Arts and Sciences" and "Education"

students. On the other hand, since the computed value of r for "Engineering" students was greater than the critical value of r, it can be inferred that hemispheric dominance of the "Engineering" students affected their writing skill. It means that the right-brained or whole-brained "Engineering" students tended to be better writers; whereas, the left-brained tended to be poorer writers.

E. Hemispheric Dominance and Global English Proficiency by Area of Specialization. The results of the correlation analysis between hemispheric dominance and global English proficiency when students were grouped according to their courses revealed different relationships. Among the "Arts and Sciences" students, their hemispheric dominance was positively but insignificantly related with their global English proficiency. On the other hand, the "Engineering " students' hemispheric dominance had a negative but also insignificant correlation with their global English proficiency score. Moreover, there was a negative and significant correlation between the   hemispheric   dominance   and global   English proficiency of the "Education " students. These were evidenced by the computed values of r of 0.046, -0.0747 and -0.1891 respectively, against their critical value of r of 0.183 at 0.05 level of significance.

Although the degrees of correlation were all insignificant at 0.05 level of significance, as mentioned, the results imply that the right-brained or whole-brained "Arts and Sciences" students tended to have better performance in the global or overall

test of English proficiency while the left-brained of the same course, poorer in the same test and that the left-brained "Engineering" and "Education" students tended to perform better in the same global test of English proficiency than the right-brained or whole-brained of the same courses.

This finding which shows no significant correlation between students' hemisphericity and global English proficiency in terms of their area of specialization is somehow inversely related with Brown's (1988) study on the relationship between background, sex, and cognitive profile with success in computer programming among college freshmen which revealed, among others, a strong correlation between Type I cognitive profile (analytic ability or alternatively field independence which is closely related with left-brain dominance) and success in computer programming.

CHAPTER V

SUMMARY OF FINDINGS, CONCLUSIONS

AND RECOMMENDATIUONS

This study was conducted to determine the relationship between hemispheric dominance and English proficiency in the four macro skills of the college students of Western Mindanao State University. Its summary of findings, conclusions and recommendations are presented in this chapter in the sequence as introduced.

Summary of Findings

The analyses of the data yielded the following findings:

1. Out of 240 respondents of the study, 74.6 percent (or 179) were left-brained, 21.7 percent (or 52) were right-brained and 3.8 percent (or 9) were whole-brained.

2. The student's English proficiency score in each of the four macro was as follows:

   a. Listening. In the macro skill test listening, out of the 35-item Listening Comprehension Test, the students' mean score was 21.22 which had the grade of 2.5 which was qualitatively interpreted as "fair".

   b. Speaking. In the Speaking Skill Test of 25 points, the respondents obtained a mean score of 16.5 with a grade of 2.25 which meant "good".

c. <u>Reading.</u> In the macro skill test of reading, out of the 35 items, the students got a mean score of 17.37 with a grade of 3.0 described as "passing".

d. <u>Writing.</u> In the Writing Skill Test of 25 points, they obtained a mean score of 14.04 with a grade of 2.75 which was considered "fair".

3. Out of the 155 global English proficiency score, the students got a mean score of 80.28 with an equivalent grade of 3.0 qualitatively interpreted as "passing".

4. Correlation results between the respondents' hemispheric dominance and English proficiency in the four macro skills at 0.05 level of significance revealed that hemispheric dominance was negatively but not significantly related with listening (r = -0.1057) and speaking (r = 0.0496) and writing (r = 0.0663) skills.

5. There was a negative but not significant correlation between the respondents' hemispheric dominance and global English proficiency score (r = -0.0593).

6. The following were the correlation results between hemispheric dominance and English proficiency scores when respondents were grouped according to age, gender and area of specialization:

a. <u>Hemispheric dominance and English proficiency By Age.</u>

1.) Among the "16 years old below" students. Their hemispheric dominance was negatively and significantly correlated with their speaking skill (r = -0.3473), but not significantly correlated with their listening (r = -0.1827), reading (r = -0.0047) and writing (r = o.228) skills and with their global English proficiency (r = -0.0763).

2.) Among the "17 and 18 years old" students, their hemispheric dominance was positively and significantly correlated with their reading skill (r = 0.1751), but not significantly correlated with the other three macro skills of listening (r = -0.0827), speaking (r = -0.0964) and writing (r = 0.0312) and with their global English proficiency (r = 0.0019).

3.) Among the "19 and 20 years old" students, hemispheric dominance had negative and significant relationship with the listening skill (r = -0.1647), speaking skill (r = -0.208) and global English proficiency ((r = -0.1717); a negative but not significant relationship with reading (r = -0.0797); and a positive but not significant correlation with the writing skill (r = 0.0471).

4.) Among the "20 years old and above" students, hemispheric dominance had a positive but not significant correlation with each of the four macro skills of listening (r = 0.0098), speaking (r = 0.3852), reading (r = 0.0558) and writing (r = 0.3379), and with the global English proficiency (r = 0.1019).

b. Hemispheric Dominance and English proficiency by Gender

1.) Among the "males", hemispheric dominance was negatively but not significantly related with their listening (r = -0.0867) and speaking (r = -0.0584) skills and with global English proficiency (r = -0.0238); but was positively but not significantly related with their reading (r = 0.0413) and writing (r = 1004) abilities.

2.) Among the "females", hemispheric dominance had a negative but not significant correlation with their listening (r = -0.1162) and speaking (r = -0.1638) skills and global English proficiency (r = -0.0751); but had a positive but not significant correlation with their reading (r = 0.0594) and writing (r = 0.0533) skills.

c. Hemispheric Dominance and English proficiency by Area of Specialization

1.) Hemispheric and dominance among the "Arts and Sciences" students had a negative but not significant correlation with listening (r = -0.0515) and speaking (r = -0.1268) skills; and had a positive but not significant correlation with reading (r = 0.0413), writing (r = 0.1534) and global English proficiency (r = 0.046).

2.) Among the "Engineering" students, hemispheric dominance had an insignificant negative correlation with listening skill (r = -0.1073) and global English proficiency (r = -0.0747); a negative and significant correlation with speaking (r = -0.2448); an insignificant positive correlation with reading skill (r = 0.0594); and a significant positive correlation with their writing skill (r = 0.1907).

3.) Among the "Education" students, hemispheric dominance was negatively and significantly correlated with listening (r = -0.2055), speaking (r = -0.05) and writing (r = -0.0943) skills; was positively but not significantly correlated with reading (r = 0.0272); and was negatively and significantly correlated with their global English proficiency (r = -0.1891).

Conclusions

Based on the findings of the study, the following conclusions have been drawn:

1. Most of the students of the College of Liberal Arts and Sciences, Engineering and Education of Western Mindanao State University enrolled during the first semester of School Year 1999-2000 are left-brained. Only few of them are right-brained and whole-brained.

2. The students are qualitatively "fair" in their listening and writing skills, "good" in their speaking ability, but "poor" in their reading proficiency.

3. The students' global English proficiency score is poor.

4. The students' hemisphericity does not affect their performance in each of the four macro skills of listening, speaking, reading and writing.

5. The students' hemispheric dominance does not influence their global English proficiency.

6. The correlation results between hemispheric dominance and English proficiency scores when respondents were grouped by age, gender and area of specialization elicited the following conclusions:

a. <u>On the Hemispheric Dominance and English Proficiency by Age</u>

The left-brained "16 years old and below" students tend to get higher

scores and the right-brained/ whole-brained, lower scores in the Speaking Skill

Test.

The right-brained/ the whole-brained "17 and 18 years old" students

are likely to get higher scores in the reading test while the left-brained, lower

scores in the same test.

The "19 and 20 years old" students with left-brained dominance tend

to get higher scores in listening and speaking tests and in the global English

proficiency tests whereas, those with right-brain/whole-brain dominance tend to

get lower in the same tests.

Among the "21 years old and above" students, their being left-brained,

right-brained or whole-brained has nothing to do with their listening, speaking,

reading and writing skills, and their global English proficiency.

b. <u>On Hemispheric Dominance and English Proficiency by Gender</u>
For both the male and female students, their hemispheric

dominance does not have any influence on their listening, speaking, reading and writing skills and their global English proficiency.

c. <u>On Hemispheric Dominance and English proficiency
by Area of Specialization</u>

The hemispheric dominance of the "Arts and Sciences" students have no influence on their listening, speaking, reading and writing skills, and on their English proficiency.

The "Engineering" students with left-brain dominance tend to be better speakers but poorer writer whereas; the right-brained/whole-brained tend to be better writers but poorer speakers.

Among the "Education" students, the left brained tend to get higher scores in the global test of English proficiency while the right-brained/ whole-brained, lower in the same test.

Implications

In the light of the findings and conclusions, the following implications are presented:

The result on students' hemisphericity implies that most of the students of the Colleges pf Arts and Sciences, Engineering and Education of Western Mindanao State

University are analytic learners. They learn faster/ better if lessons are presented and explained in a step-by-step/ linear manner from the specifics to the general (or following inductive method). It further implies that the present educational system has unconsciously succeeded to develop the students' left-brain but failed to develop their right brain which is the global and simultaneous processor of information.

With regard to the students' generally low proficiency level in the English language both in the macro skills and global, it implies too alarming a sign of deterioration of the English language that it demands a dire need of strengthening the basic education. In addition, the result implies that the left-brained students tend to perform better in listening, speaking and global English proficiency while the right-brained/whole-brained tend to do better in reading and writing.

The study implies further that hemispheric dominance affects the students' English proficiency when they are grouped according to their age and area of specialization, but never does it affect their English proficiency when they are categorized in terms of their gender.

Recommendations

In the light of the findings and conclusions arrived at, the following recommendations are forwarded:

A. To the English Department, Language Faculty and all Stakeholders of English

Language Teaching:

1.   Conduct continuous professional in-service trainings (at the

department as well as university level) for English instructors and professors to be

oriented on the following:

1.1   Students' hemispheric dominance and their descriptive

processing information characteristics

1.2   Students' learning styles

1.3   Multiple intelligences and their implications in identifying

student capabilities and tendencies

A knowledge of the above can guide the professors in their choice

of teaching strategies, thus enhancing students learning.

2. For the students' obtaining low level of English proficiency

both in the macro skills and global level, it is suggested that all professors

include in their respective subjects activities that may help develop

students' poor language skills, placing more emphasis on the improvement

of their poor reading comprehension skill since it is the key to

understanding all other information written in English.

3. For the English Department to embark on functional English Proficiency Test for incoming freshmen (the college-bound students) and organize the English Plus (or classes) for those who perform poorly in the test. For those who pass the test, they may proceed to English 101 which must be enriched to cater to varied categories of students.

The English Proficiency Test should contain a balanced number of items for the left-brained and right-brained students. To do it is to lessen the multiple choice tests because they cater only to the left-brained students and to include relatively enough items for the right-brained individuals like open-ended questions, questions which call for interpretation of drawings and body language, manipulation of objects, intuitive problem- solving, expression of feelings and the like. It should be recalled however that the teacher's job is to develop both hemispheres of the brain through diversified teaching activities and experiences.

4. The English Department should schedule a plethora of language activities to enhance skills of students, like:

■ Debate unlimited

- Elocution and oratorical contents

- (vocabulary and spelling contests) through the "Battle of Lects and Tongues"

- Toastmasters Club

- Editors' Guild

- Writing short Stories/Essays/Poetry and other Creative Expressions

- Stage Plays and Dramas

- Organize symposia, fora and other talk show to expose students to varied language experiences

The above activities will develop the whole individual, thus giving enrichment to the conventional lecture-practice-relation lessons.

B. To the English Language Researchers

The limitation found in terms of the number of categorized HD respondents in this paper urged the researcher to recommend the following:

1. Expand the number of respondents (like identifying the whole college of university) to realistically "profile" the hemispheric dominance of students and not just select in random in order to get the full picture of hemisphericity among students.

2. Construct two sets of examination (one of the sequential/linear/step-by-step type and the other is creative/situational/open-ended type) and administer these both to the three (3) categorized identified students (left-brained, right-brained and whole-brained) and compare their achievement levels for purposes of profiling differences in manner of processing test items.

3. Replicate the present study with "equated number" of respondents in terms of hemispheric dominance with Science and Technology students versus the Arts and Humanities students.

C. To the Material Developers/ Procedures and Testing Preparation Centers

The result which shows that students vary in brain processing activities when presented with different instructional materials, tests and tasks, urged the researcher to recommend the following:

1. Study student learning styles, multiple intelligences and hemispheric dominance characteristics in the preparation of materials in order to develop the diversified skill processing functions of the brain.

2. Textbooks produced must take into consideration the text types and tasks which should match the students' hemisphericity.

3. Material developers must undergo training to keep abreast with new educational concepts, knowledge and information.

4. The Testing Center must continuously develop the Test Item Bank and reformulate items to keep their congruency and compatibility with skills and knowledge tested.

D. To the Guidance Counseling Unit of the College

The finding which shows the younger set of students (age 16 and below) to be better performers than the older group (age 19 and above) in the study of tests needs a follow-up investigative effort. A look into their study habits as well as informal interviews may be conducted to better guide them in their performance.

E. To Administration

1. Support the academic efforts of colleges to enhance language enrichment of students and faculty upgrading.

2. Set aside the needed financial assistance/ budget for testing, material production, faculty remuneration as well as facilities upgrading for colleges and departments.

3. Make policy pronounced for all incoming freshmen to undergo the English Proficiency Test and organize "English Plus" class for low performer.

4. Create a task force to oversee and monitor these efforts to completion/realization.

REFERENCES

Aguiar, L. (1993). Reading Ability, Vocabulary Acquisition, and Phonological
      Process: An Investigation of Vocabulary Acquisition by Skilled and Less
      Skilled Readers (Doctoral Dissertation, Purdue University of Rhode Island, 1993).
      Dissertation Abstract International, 54, 2950A-2951A.

Alcantara, et. al. *Teaching Strategies I for the Teaching of the Communication Arts:*
      Listening, Speaking, Reading and Writing. Philippine Association for
      Teacher Education and Katha Publishing Co., Inc.

Alvarez, A. (1979, August). "Piaget for Classroom Teachers". *The Curriculum*
      Bulletin, XIX, 7-12.

American Psychological Association. (1983). *Publication Manual of the American*
      Psychology Association (3rd ed.) Washington, DC: Author.

Anonymous author. Difference between Left and Right Hemisphere. Available:
      .http://www.mtsu.edu/~devstud/advisor/hemis.html.

Anonymous author. Learning Styles, Culture and Hemispheric Dominance. Available:
      http://www.geocities.com/CollegePark/Quad/4392/brain.htm.

Appel, R. & Muysken, P. (1987). *Language Contact and Bilingualism.*
      Australia: Edward Arnold Pty., Ltd.

Ardales, V.B. (1992). *Basic Concept and Methods in Research*. Quezon
      City: Great Books Training.

Arrington, H J. (1989). An Investigation of the Relationship between Cognitive Style,
      Visualization, and Problem Solving in Eight-grade Males and Females
      (Doctoral Dissertation, Purdue University,1988). *Dissertation Abstracts*
      International, 49, 2151A.

Barss, A. (1992). ASL and Dominance/Handedness [Computer program]. Barss a
      CCIT. Arizona.Edu (http://listserv.lingist.org./issues/3/3-684.html).

Begley, S. (1996, February). "Your Child's Brain". *Newsweek, 124, 8, 42-46*.

Benderly, B L. The Multilingual Mind in Roberts, William H. and
      Gregorie Turgeon. (1989). *About Language: A Reader for Writers*.
      Boston: Houghton Mifflin Company.

Borgert, M L (1991). Effectiveness of Right Brain Stimulation on Children
and Their Creativity in Writing (Doctoral Dissertation, Union Institution,
1990).*Dissertation Abstracts International,* 52, 844A.

Bowlin, D A. (1988). An Investigation of the Relationship between Field
Dependent/Independent Cognitive Style and Sex, I.Q., Academic Achievement,
Curriculum Track Selection, and Hemispheric Preference in High School
Seniors (Doctoral Dissertation, University of Pittsburg, 1988).
Dissertation Abstracts International, 49, 1405-A.

Brandwein, P. & Ornstein, B. (1977, January). "The Duality of the Mind".
Instructor, LXXXVI, 5, 54-58.

Breien-Pierson, R. (1988). The Influence of Brain Hemisphericity on the
Composing Process of Twelfth Grades (Doctoral Dissertation, Old
Dominion University, 1988). *Dissertation Abstracts International*, 49,
1092-A.

Brown, H.D. (1994). *Principles of Language Learning and Teaching
(3rd ed.).* Englewood Cliffs, New Jersey: Prentice Hall, Inc.

Brown, H. D. (1994). *Teaching by Principles*. Englewood Cliffs, New
Jersey 0763: Prentice Hall, Inc.

Brown, W. (1989). Relationship between Cognitive Profiles, Background, and
Success in Computer Programming (Doctoral Dissertation, Vanderbitt University,
1988). *Dissertation Abstracts International*, 49, 29967-A.

Brumfit, C. J. ed. *Testing English for University Study*. ELT Document: 127.

College of Education. (1998). *Theses and Dissertations: Guidelines and Standards*.
Diliman, Quezon City: College of Education, University of the Philippines.

Dmytrenko, M.(1990). Social and Effective Variables in Second Language
Learning during Acculturation: Iranians in Washington, D.C. (Doctoral
Dissertation, Georgetown University, 1987). *Dissertation Abstracts
International,* 50, 2879-A

Domingos, B.W. (1991). Affective Style, Ego Identity, Status and Care Interest
(Doctoral Dissertation, Bryn Mawr College, 1991). *Dissertation Abstracts
International*, 52, 1260-A.

Dumadag, L. (1994). Problem Comprehension of Senior High School Students
in Zamboanga City. Unpublished Master's Thesis, UP College of Education,
Quezon City.

Ellis, R. (1985). *Understanding Second Language Acquisition*. Oxford: Oxford University Press.

Fonollera, M.B. (1993). *Developing Competencies in Research Writing*. Philippines: Melfon Publishing, Inc.

Froele, T. C. (1991). Correlates of EEG Hemispheric Integration (Doctoral Dissertation, Indiana University, 1990). *Dissertation Abstract International,* 52, 863-A.

Fromkin, V. & Rodman,R. (1989). *An Introduction to Language*. (3rd ed.). New York: Holt, Rinehart and Winston.

Gabriel, J.P. et al. (1996). *English I: Listening, Speaking, Reading, Writing*. Sta. Mesa, Manila: Saint Bernadette Publications, Inc.

Genesee, F. Neuropsychology and Second Language Acquisition in Beebe, Leslie M. ed. (1988). *Issues in Second Language Acquisition*. New York: Newbury House Publishers.

Gonzales, A (1989). *The Correlation between the Admission Requirement to the Nursing Course of Ateneo de Zamboanga and Clinical Performance of the Graduates*. Unpublished Master's Thesis, Ateneo de Zamboanga.

Gonzales, A. FSC. (1988). "English Language Teaching and the New Constitution". *CETA Journal, 5, 1, 69-78*.

Hall, M J. (1988). Relationship between Reading Proficiency and Field Dependence, Field Independence, and Sex (Doctoral dissertation, Auburn University, 1987), *Dissertation Abstracts International,* 49, 226-A.

Hawkins, MG. (1988). The Combined Predictive Value of Learning Style Characteristics and Personality Factors on Academic Achievement (Doctoral Dissertation, East Texas State University, 1987). *Dissertation Abstracts International,* 49, 766-A.

Genesee, F. Neuropsychology and Second Language Acquisition in Beebe, Leslie M. ed. (1988). *Issues in Second Language Acquisition*. New York: Newbury House Publishers.

Gloria, R. (1994, November). "Decline of English Threatens RP Progress". *Philippine Daily Inquirer*.

Heaton, J.B. (1988). *Writing English Language Tests (New Ed.)*. New York: Longman Group UK Limited.

Ingram, D.E. (1985). *Assessing Proficiency: An Overview on Some Aspects of Testing, Modeling and Assessing Second language Acquisition*. Ed. Kenneth Multilingual Matters, Ltd.

Kapadia, MV. (1988). The Relationship between Cognitive Styles and Achievement under Computer-based Instruction. (Doctoral Dissertation, Memphis University, 1987). *Dissertation Abstracts International*, 49, 62 A.

Ke, C. (1992). Lateralization Effects of Language and Bilingualism: A Dichotic Study of Chinese and English Speakers (Doctoral dissertation, Indiana University, 1992). *Dissertation Abstract International*, 53, 1890-A.

Kini, AS. (1993). Effects of Cognitive Learning Style and Verbal and Visual Presentation Modes on Concept Learning in Computer-based Instruction (Doctoral Dissertation, Texas A & M University, 1993), *Dissertation Abstracts International*, 54, 2954-A.

Kohlbrenner, RJ. (1989). Lateralization in High school I.Q. Children (Doctoral Dissertation, Syracuse University, 1988). *Dissertation Abstracts International*, 50, 650A.

Korzak, G. (1989). The Influence of Hatha Yoga on Nasal Laterality Among Yoga Practitioners (Doctoral Dissertation, Northern Illinois University, 1988). *Dissertation Abstracts International*, 50, 650-A—651-A.

Lemonick, MD. (1995, July 31). "Glimpses of the Mind". *Time, 146, 5, 34-42*.

Lenier, M. & Maker, J. (1984). *College Reading Book II*. Belmont California: Wadsworth Publishing Company.

Lenneberg, E. *The Biological Foundations of Language*. New York: John Wiley and Sons. in Brown, 1994.

Levy, J. (1985, May). "Right Brain, Left Brain: Fact and Fiction". *Psychology Today, 19, 38, 42-44*.

Margolis, J.S. (1990). Psychology of Gender and Academic Discourse: A Comparison between Female and Male Students' Experiences Talking in the College Classroom (Doctoral Dissertation, Harvard University, 1990), *Dissertation Abstracts International*, 51, 1958A—1959A.

Marmoleño, R (1999). *Performance of Ateneo de Zamboanga Grade School Students on the Reading Test Level I and Level II*. An Institutional Research, AdeZ Research Office, La Purisima St., Zamboanga City

Martin, L. (1992). Cognitive Style and Metaphoric Comprehension in Second through Fifth-grade Children (Doctoral dissertation, State University). *Dissertation Abstracts International*, 53, 4257-A.

Martin, ST. (1993). Learner Field Dependency, Information Sequence Preference, andPosttest Achievement for Hypertext-based Computer-assisted Instructional Program (Doctoral Dissertation, State University at Albany, 1992). *Dissertation Abstracts International*, 53, 3149-A—3150-A.

Miller, J. (1983). *Many Voices: Bilingualism, Culture and Education*. London, Boston: Melbourne and Henley.

Mundel-Athertone, BJ. (1990). Differences in Visual Hemifield Processing of Linguistic Materials by Deaf and Hearing Adult Males (Doctoral Dissertation, University of Alberta, 1989). *Dissertation Abstracts International,* 50, 3528-A.

Munzert, A.W. (1980). *The Constitution of the Philippines (1st Ed.)*. Caloocan: Philippine Graphic, Inc.

Nah, K. (1990). The Relationship of Korean Students' Learning Style with Residence, Gender and Achievement (Doctoral Dissertation, Oklama State University, 1989). *Dissertation Abstracts International,* 5,458-A.

Nielsen, II, T J. (1989). An Analysis of the Brain Dominance Profiles of Selected L.D.S. Seminary Teachers and Students in the Salt Lake South Korea of the C.E.S. in 1987 (Doctoral Dissertation, Brigham Young University, 1988). *Dissertation Abstracts International,* 4, 2976-A—2977-A.

Obler, L.K. (1981). *Right Hemisphere Participation in Second Language Acquisition.* in Diller 1981 and Brown 1994.

Oller, Jr. & John, W. (1979). *Language Tests at School*. USA: Longman Group, Ltd.

Paloma, E D. (1994, July). "Theories of Transfer of Learning". *The Modern Teacher, XLIII, 2, 52*.

Pascasio, E. (1981, August). "How Can We Revitalize English Instruction in College?" *Philippine Journal for Language Teaching,* 1& 2.

Ramos, F.V. (1994). "Empower People with English". (President's Speech.

Educator's Congress, Baguio City, Philippines) *English News Echoes, Shan Kramer English-Universe City*. Gov. Camins, Zamboanga City.

Rodriguez, YE G. (1992). The Effects of Bilingualism on Cognitive Development (Doctoral dissertation, Temple University, 1992). *Dissertation Abstracts International,* 53, 1104-A.

Rojas, Y.B. (1987). *Reading Difficulties of Second Year High School Slow Learners as Basis of a Remedial Reading Program.* Unpublished Master's Thesis, Ateneo de Zamboanga, Zamboanga City.

Rosa, M H. (1991). Relationship between Cognitive Styles and Reading Comprehension of Narrative and Expository Prose of Fourth-grade Students on an Urban School District (Doctoral Dissertation, Wayne State University, 1991). *Dissertation Abstracts International*, 52, 1275A.

Ross, S I. (1994). The Relationship between Cognitive Style and Academic Achievement in African-American High-school Students (Doctoral Dissertation, Fordham University, 1994). *Dissertation Abstracts International*, 55, 914-A.

Scovel, T. "Review of Suggestology and Outlines of Suggestopedy," by Georgi Lozanov. *TESOL Quarterly,* 13 255-266. In Brown 1994.

Sicat, S. S. (1992). Freshmen Students' Cognitive Styles and Personality Traits as Correlates of Academic Language Proficiency (A Psycho-lingistic Study). Unpublished Doctoral Dissertation, Western Mindanao State University, Zamboanga City.

Silorio, A. S. (1992). Reading Comprehension: A Predictor to the Performance of Fourth Year High School Students in Major Academic Subjects in WMSU. Unpublished Master's Thesis, Ateneo de Zamboanga, Zamboanga City.

Staehler, BA. (1994). The Relations among Cognitive Styles, Alternative Methods of Instruction, Academic Performance, and Motivational Factors (Doctoral Dissertation, University of Wisconsin, 1993). *Dissertation Abstracts International*, 55, 66A.

Steinberg, D. (1993). *An Introduction to Psycholinguistics*. New York: University Press. In Brown 1994.

Stevick, E. (1982). *Teaching and Learning Language*. New York: Cambridge University Press.in Brown 1994.

Swain, et al. Linguistic Interdependence among Japanese and Vietnamese Immigrant Students, in Rivers (ed.). (1984). *Communicative Competence I Approaches to Language Proficiency Assessment: Research and Application*. Cleverdan, England.

Tabacug, J.Y. (1990). *Socio-psychological Distance and Proficiency in Chavacano, Filipino and Cebuano College Students of WMSU.* Unpublished Doctoral Dissertation, University of the Philippines, Quezon City.

Tagle de, J. (1992, Jan-June). "A Genius in Every Child: The Paradigm Shift of Integrative Learning in Education and Productivity". *Innotech Journal,* XVI, 1, 12-13.

Tamondong-Diaz, MD. M. (1982). Intercorrelations among Personality Variables and Performance of Students. (Unpublished Doctoral Dissertation, Cagayan University, 1981). *Research Report*, 41, 1-17.

Tannem, D. (1990). *You Just Don't Understand: Women and Men in Conversation.* New York: William Marrow.

Torrance, P. (1980). *Your Style of Learning and Thinking, Forms B and C*. Athens GA: University of Georgia. In Brown 1994.

Vegare, M.P. (1993). Assessed Language Proficiency and Actual Performance of Student Teachers of Western Mindanao State University. Unpublished Doctoral Dissertation, Western Mindanao State University, Zamboanga City.

Viise, NM. . (19993). A Comparison of Child and Adult Spelling Development (Doctoral dissertation, University of Virginia, 1992). *Dissertation Abstracts International,* 54, 1744A—1745A.

Waltz, E. (1991). Cerebral Laterality and Color Information Processing (Doctoral dissertation, University of Pittsburg, 1990). *Dissertation Abstracts International,* 51, 3371-A.

Witten, CV. (1990). Field Dependence-Field Independence:The relationship of Cognitive Style and Academic Achievement. (Doctoral Dissertation, North Carolina State University, 1989). *Dissertation Abstracts International*, 50, 3194A—3195A.

Wright, L. B. (1992). An Investigation of Psychological Variables Related to Academic Achievement among Fourth and Fifth Grade African-American Males (Doctoral dissertation, Texas A& M University,1991). *Dissertation Abstracts International,* 52, 3323-A.

APPENDICES

APPENDIX A

**Data Summary Table on the Respondents' Hemispheric Dominance
And English Proficiency Scores by Area of Specialization**

Respondents' Code	Specialization	Age	Sex	HD Score	Listening	Speaking	Reading	Writing	Cloze	Global
1.	CAS-1	16	M	1	30.00	17.00	23.00	18.00	26.00	114.00
2.	CAS-1	17	F	-1	14.00	19.33	13.00	12.70	7.00	66.03
3.	CAS-1	16	F	-5	21.00	14.33	17.00	14.00	13.00	79.33
4.	CAS-1	16	F	-3	21.00	10.67	16.00	12.00	8.00	67.67
5.	CAS-1	17	F	-3	15.00	14.00	23.00	18.30	11.00	81.30
6.	CAS-1	17	F	1	27.00	18.00	23.00	16.00	11.00	95.00
7.	CAS-1	16	F	-1	14.00	10.67	14.00	13.30	5.00	56.97
8.	CAS-1	16	F	-2	29.00	22.33	24.00	21.70	7.00	104.03
9.	CAS-1	17	F	-4	27.00	16.33	23.00	16.30	15.00	97.63
10.	CAS-1	16	M	-2	28.00	19.33	23.00	15.30	17.00	102.63
11.	CAS-1	16	M	-1	30.00	20.67	20.00	19.00	15.00	104.67
12.	CAS-1	17	F	-7	22.00	11.33	22.00	10.70	9.00	75.03
13.	CAS-1	17	F	-1	19.00	9.00	18.00	15.30	4.00	65.30
14.	CAS-1	17	M	-1	13.00	6.33	13.00	13.30	7.00	52.63
15.	CAS-1	16	F	-5	18.00	17.33	19.00	13.70	16.00	84.03
16.	CAS-1	16	F	-1	18.00	13.00	9.00	11.70	7.00	58.70
17.	CAS-1	16	F	-2	22.00	12.33	26.00	13.00	7.00	80.33
18.	CAS-1	17	F	1	15.00	14.67	16.00	13.30	1.00	59.97
19.	CAS-1	16	F	-1	17.00	19.00	17.00	12.30	11.00	76.30
20.	CAS-1	18	M	-4	17.00	15.00	8.00	12.00	11.00	63.00
21.	CAS-2	19	F	-1	19.00	17.00	6.00	9.70	10.00	61.70
22.	CAS-2	17	F	-3	22.00	13.00	16.00	9.30	10.00	70.30
23.	CAS-2	18	F	-3	20.00	16.00	16.00	7.70	9.00	68.70
24.	CAS-2	17	F	-11	17.00	19.00	15.00	12.00	10.00	73.00
25.	CAS-2	18	F	-3	26.00	20.00	16.00	15.30	10.00	87.30
26.	CAS-2	18	F	-3	15.00	16.00	12.00	8.00	9.00	60.00
27.	CAS-2	17	F	-6	18.00	12.67	18.00	10.30	8.00	66.97
28.	CAS-2	19	M	-4	13.00	7.70	13.00	10.30	10.00	54.00
29.	CAS-2	17	F	3	22.00	13.30	11.00	10.00	4.00	60.30
30.	CAS-2	18	F	-7	20.00	12.00	10.00	13.30	10.00	65.30
31.	CAS-2	17	F	-6	12.00	9.70	13.00	11.00	12.00	57.70
32.	CAS-2	17	F	-4	21.00	12.70	18.00	8.00	11.00	70.70
33.	CAS-2	18	F	-1	18.00	12.30	19.00	8.30	8.00	65.60

Respondents Code	Specialization	Age	Sex	HD Score	Listening	Speaking	Reading	Writing	Cloze	Global
34.	CAS-2	18	F	-1	19.00	23.00	13.00	9.30	8.00	72.30
35.	CAS-2	19	F	2	15.00	35.30	18.00	7.70	5.00	81.00
36.	CAS-2	19	F	-4	18.00	19.30	16.00	12.70	10.00	76.00
37.	CAS-2	21	F	-3	5.00	12.70	8.00	7.70	6.00	39.40
38.	CAS-2	19	F	2	13.00	10.00	14.00	10.00	9.00	56.00
39.	CAS-2	18	F	-1	21.00	15.00	12.00	6.00	5.00	59.00
40.	CAS-2	18	F	-3	6.00	13.30	12.00	7.70	7.00	46.00
41.	CAS-3	19	F	-3	20.00	16.50	22.00	18.00	9.00	85.50
42.	CAS-3	19	F	-1	15.00	17.00	19.00	16.70	5.00	72.70
43.	CAS-3	18	F	0	20.00	17.00	27.00	21.00	14.00	99.00
44.	CAS-3	19	F	2	21.00	18.00	23.00	15.30	19.00	96.30
45.	CAS-3	20	F	-2	24.00	24.00	16.00	18.30	11.00	93.30
46.	CAS-3	21	F	0	23.00	18.00	15.00	20.00	12.00	88.00
47.	CAS-3	18	F	1	18.00	16.00	17.00	15.70	9.00	75.70
48.	CAS-3	20	F	3	15.00	14.00	18.00	15.30	9.00	71.30
49.	CAS-3	18	F	-3	26.00	23.00	27.00	18.70	13.00	107.70
50.	CAS-3	19	F	-2	17.00	18.00	14.00	18.00	8.00	75.00
51.	CAS-3	20	F	-8	27.00	20.00	11.00	13.00	11.00	82.00
52.	CAS-3	19	F	-2	24.00	18.00	22.00	22.00	12.00	98.00
53.	CAS-3	19	F	-2	25.00	22.00	25.00	18.30	12.00	102.30
54.	CAS-3	18	F	-1	27.00	20.50	27.00	20.70	13.00	108.20
55.	CAS-3	19	F	-1	23.00	21.50	21.00	17.70	10.00	93.20
56.	CAS-3	18	F	3	17.00	14.50	18.00	13.30	11.00	73.80
57.	CAS-3	19	F	-1	24.00	14.00	21.00	20.00	8.00	87.00
58.	CAS-3	19	M	-3	16.00	20.00	12.00	19.70	6.00	73.70
59.	CAS-3	18	M	-4	15.00	14.50	16.00	15.70	9.00	70.20
60	CAS-3	19	F	4	16.00	16.50	19.00	16.70	9.00	77.20
61	CAS-4	19	F	-7	19.00	19.00	19.00	1.00	11.00	69.00
62	CAS-4	19	F	-2	20.00	19.00	28.00	15.30	13.00	95.30
63	CAS-4	20	F	2	25.00	16.00	21.00	18.30	13.00	93.30
64.	CAS-4	19	F	-1	23.00	24.00	24.00	14.00	9.00	94.00
65.	CAS-4	19	F	-5	19.00	19.00	11.00	13.00	8.00	70.00
66.	CAS-4	20	F	-1	30.00	23.00	26.00	19.70	17.00	115.70
67.	CAS-4	19	F	-1	23.00	22.00	16.00	13.70	13.00	87.70
68.	CAS-4	19	F	-2	26.00	23.00	27.00	14.00	14.00	104.00
69.	CAS-4	19	F	-3	30.00	25.00	27.00	19.00	15.00	116.00
70.	CAS-4	20	F	-4	19.00	22.00	22.00	15.30	6.00	84.30
71.	CAS-4	20	F	-7	30.00	20.00	15.00	10.70	8.00	83.70

Respondents Code	Specialization	Age	Sex	HD Score	Listening	Speaking	Reading	Writing	Cloze	Global
72.	CAS-4	20	F	-8	20.00	21.00	21.00	12.3	9.00	83.30
73.	CAS-4	20	F	-4	14.00	15.00	11.00	12	8.00	60.00
74.	CAS-4	19	F	-5	29.00	22.00	17.00	14	13.00	95.00
75.	CAS-4	20	F	-1	20.00	20.00	13.00	16.3	6.00	75.30
76.	CAS-4	20	F	-1	19.00	17.00	20.00	15.7	12.00	83.70
77.	CAS-4	22	M	2	14.00	14.00	16.00	12	13.00	69.00
78.	CAS-4	20	M	-5	22.00	19.00	27.00	15.7	11.00	94.70
79.	CAS-4	20	M	-2	24.00	14.00	14.00	12.7	10.00	74.70
80.	CAS-4	20	M	-1	24.00	22.00	18.00	19	11.00	94.00
81.	ENG'G.-1	16	F	-2	21.00	16.70	19.00	12.3	6.00	75.00
82.	ENG'G.-1	17	M	-6	27.00	17.70	5.00	16.7	5.00	71.40
83.	ENG'G.-1	21	M	3	26.00	16.70	17.00	13.3	8.00	81.00
84.	ENG'G.-1	27	F	1	20.00	13.00	20.00	8.3	5.00	66.30
85.	ENG'G.-1	16	F	-1	27.00	15.00	19.00	17.3	9.00	87.30
86.	ENG'G.-1	17	F	1	29.00	16.00	12.00	9.7	6.00	72.70
87.	ENG'G.-1	16	M	-2	22.00	15.70	18.00	11	9.00	75.70
88.	ENG'G.-1	16	M	-2	23.00	14.00	18.00	16	5.00	76.00
89.	ENG'G.-1	16	M	2	14.00	8.30	11.00	16.3	8.00	57.60
90.	ENG'G.-1	16	M	-1	17.00	10.30	25.00	18.7	20.00	91.00
91.	ENG'G.-1	16	F	-7	21.00	13.70	23.00	13.3	8.00	79.00
92.	ENG'G.-1	16	F	-1	28.00	18.30	16.00	11.7	0.00	74.00
93.	ENG'G.-1	16	F	3	13.00	8.30	26.00	17.7	8.00	73.00
94.	ENG'G.-1	17	F	0	16.00	8.30	25.00	14	12.00	75.30
95.	ENG'G.-1	17	F	-4	20.00	13.00	12.00	16	5.00	66.00
96.	ENG'G.-1	18	F	-3	18.00	17.00	8.00	13	12.00	68.00
97.	ENG'G.-1	17	F	3	19.00	14.70	18.00	12.7	5.00	69.40
98.	ENG'G.-1	16	M	4	21.00	11.00	13.00	15	5.00	65.00
99.	ENG'G.-1	16	M	5	22.00	13.30	14.00	10	5.00	64.30
100.	ENG'G.-1	17	M	-7	15.00	12.70	11.00	14.3	6.00	59.00
101.	ENG'G.-2	17	M	-3	28.00	15.00	6.00	13.3	8.00	70.30
102.	ENG'G.-2	18	M	-1	24.00	15.70	19.00	14	8.00	80.70
103.	ENG'G.-2	19	M	4	22.00	14.70	14.00	11.3	8.00	70.00
104.	ENG'G.-2	19	M	1	22.00	17.30	19.00	15.3	13.00	86.60
105.	ENG'G.-2	17	M	-7	31.00	21.30	25.00	15.7	11.00	104.00
106.	ENG'G.-2	18	M	1	27.00	15.70	21.00	14.3	12.00	90.00
107.	ENG'G.-2	17	M	-1	25.00	14.30	22.00	13.3	9.00	83.60
108.	ENG'G.-2	18	M	-2	19.00	17.30	12.00	12.7	7.00	68.00
109.	ENG'G.-2	18	M	-1	24.00	15.70	20.00	14	8.00	81.70

Respondents Code	Specialization	Age	Sex	HD Score	Listening	Speaking	Reading	Writing	Cloze	Global
110.	ENG'G.-2	18	M	-8	19.00	14.30	14.00	10.70	4.00	62.00
111.	ENG'G.-2	18	M	-3	30.00	17.00	14.00	11.00	10.00	82.00
112.	ENG'G.-2	18	M	-2	18.00	16.30	7.00	13.00	10.00	64.30
113.	ENG'G.-2	18	M	-4	24.00	16.00	13.00	13.70	10.00	76.70
114.	ENG'G.-2	18	M	1	22.00	13.30	19.00	12.30	8.00	74.60
115.	ENG'G.-2	17	M	-1	27.00	16.00	11.00	12.70	8.00	74.70
116.	ENG'G.-2	18	M	-3	22.00	15.30	6.00	12.30	12.00	67.60
117.	ENG'G.-2	18	M	1	24.00	21.30	24.00	19.30	15.00	103.60
118.	ENG'G.-2	18	M	-2	31.00	15.00	20.00	12.30	10.00	88.30
119.	ENG'G.-2	19	M	2	24.00	17.70	10.00	18.30	10.00	80.00
120.	ENG'G.-2	18	M	1	29.00	17.70	15.00	14.70	5.00	81.40
121.	ENG'G.-3	19	M	5	15.00	13.67	15.00	11.70	13.00	68.37
122.	ENG'G.-3	19	F	5	30.00	12.33	17.00	12.30	15.00	86.63
123.	ENG'G.-3	19	F	1	21.00	17.00	15.00	17.00	12.00	82.00
124.	ENG'G.-3	18	F	-1	23.00	18.33	4.00	18.70	12.00	76.03
125.	ENG'G.-3	20	M	1	18.00	14.33	16.00	15.30	9.00	72.63
126.	ENG'G.-3	20	M	-3	22.00	17.33	16.00	15.00	13.00	83.33
127.	ENG'G.-3	20	M	1	19.00	18.67	12.00	17.30	9.00	75.97
128.	ENG'G.-3	20	M	3	17.00	15.33	16.00	16.30	8.00	72.63
129.	ENG'G.-3	19	F	1	21.00	14.00	11.00	17.00	8.00	71.00
130.	ENG'G.-3	18	M	3	20.00	17.67	11.00	12.30	12.00	72.97
131.	ENG'G.-3	18	M	-2	20.00	12.00	11.00	14.00	9.00	66.00
132.	ENG'G.-3	18	M	-5	16.00	19.00	10.00	13.70	5.00	63.70
133.	ENG'G.-3	19	M	-2	27.00	11.67	19.00	12.30	5.00	74.97
134.	ENG'G.-3	19	M	-6	23.00	15.67	18.00	12.70	12.00	81.37
135.	ENG'G.-3	18	F	-3	25.00	20.00	14.00	16.00	8.00	83.00
136.	ENG'G.-3	18	F	-3	17.00	13.00	13.00	15.30	8.00	66.30
137.	ENG'G.-3	20	F	-1	24.00	12.33	25.00	13.00	6.00	80.33
138.	ENG'G.-3	19	M	-4	26.00	18.33	16.00	13.70	7.00	81.03
139.	ENG'G.-3	19	M	-3	15.00	15.00	15.00	15.70	4.00	64.70
140.	ENG'G.-3	19	M	-6	16.00	14.67	15.00	14.00	6.00	65.67
141.	ENG'G.-4	20	F	-4	25.00	19.00	20.00	12.00	15.00	91.00
142.	ENG'G.-4	20	F	-1	17.00	18.00	13.00	13.70	9.00	70.70
143.	ENG'G.-4	19	F	-2	21.00	16.50	23.00	11.00	17.00	88.50
144.	ENG'G.-4	19	F	-1	16.00	14.50	20.00	10.30	21.00	81.80
145.	ENG'G.-4	20	M	-1	20.00	14.50	19.00	10.00	13.00	76.50
146.	ENG'G.-4	18	M	-1	15.00	12.00	14.00	8.00	9.00	58.00
147.	ENG'G.-4	18	M	-3	17.00	11.50	12.00	8.30	8.00	56.80

Respondents Code	Specialization	Age	Sex	HD Score	Listening	Speaking	Reading	Writing	Cloze	Global
148.	ENG'G.-4	20	F	-5	30.00	17.00	24.00	10.00	14.00	95.00
149.	ENG'G.-4	22	M	-1	14.00	15.50	10.00	6.30	12.00	57.80
150.	ENG'G.-4	27	M	-6	27.00	18.00	20.00	10.00	13.00	88.00
151.	ENG'G.-4	19	M	-3	13.00	20.50	18.00	15.00	10.00	76.50
152.	ENG'G.-4	21	M	-4	17.00	15.00	11.00	11.00	7.00	61.00
153.	ENG'G.-4	20	M	-5	16.00	18.00	14.00	12.00	11.00	71.00
154.	ENG'G.-4	20	M	-4	23.00	19.00	15.00	16.00	10.00	83.00
155.	ENG'G.-4	20	M	-1	23.00	14.50	19.00	8.30	23.00	87.80
156.	ENG'G.-4	20	M	2	22.00	18.50	20.00	9.70	18.00	88.20
157.	ENG'G.-4	21	M	-1	29.00	20.00	23.00	16.00	16.00	104.00
158.	ENG'G.-4	21	M	-3	19.00	16.00	23.00	11.00	19.00	88.00
159.	ENG'G.-4	20	M	-3	22.00	14.50	21.00	7.30	20.00	84.80
160.	ENG'G.-4	20	M	-3	21.00	20.50	22.00	16.00	22.00	101.50
161.	EDUC.-1	17	F	-3	26.00	15.50	26.00	18.30	20.00	105.80
162.	EDUC.-1	17	F	-1	19.00	18.00	16.00	18.00	8.00	79.00
163.	EDUC.-1	17	F	-4	23.00	21.00	24.00	19.00	15.00	102.00
164.	EDUC.-1	16	F	3	21.00	18.00	20.00	18.70	8.00	85.70
165.	EDUC.-1	16	F	-5	21.00	21.00	21.00	18.00	8.00	89.00
166.	EDUC.-1	17	F	-3	27.00	19.50	24.00	19.30	8.00	97.80
167.	EDUC.-1	17	F	-5	19.00	16.50	13.00	17.00	17.00	82.50
168.	EDUC.-1	15	F	-3	17.00	22.00	19.00	7.30	16.00	81.30
169.	EDUC.-1	17	F	1	25.00	23.00	20.00	17.00	17.00	102.00
170.	EDUC.-1	17	F	-2	25.00	20.50	27.00	18.70	15.00	106.20
171.	EDUC.-1	16	F	-3	25.00	19.50	18.00	18.30	13.00	93.80
172.	EDUC.-1	17	F	4	26.00	20.50	22.00	16.30	14.00	98.80
173.	EDUC.-1	16	F	2	28.00	16.50	26.00	20.70	19.00	110.20
174.	EDUC.-1	17	F	-7	24.00	19.50	18.00	19.70	15.00	96.20
175.	EDUC.-1	17	M	-8	27.00	18.00	20.00	17.70	19.00	101.70
176.	EDUC.-1	17	F	-7	26.00	16.50	21.00	13.30	16.00	92.80
177.	EDUC.-1	16	F	-4	26.00	21.00	19.00	15.30	14.00	95.30
178.	EDUC.-1	17	F	-1	32.00	24.00	26.00	22.70	18.00	122.70
179.	EDUC.-1	16	M	-5	30.00	24.00	20.00	20.30	9.00	103.30
180.	EDUC.-1	17	M	1	21.00	17.00	26.00	14.70	18.00	96.70
181.	EDUC.-2	17	F	-1	27.00	23.50	22.00	20.30	15.00	107.80
182.	EDUC.-2	18	F	-7	28.00	20.50	22.00	15.70	16.00	102.20
183.	EDUC.-2	18	F	-5	24.00	14.50	24.00	13.00	13.00	88.50
184.	EDUC.-2	18	F	1	23.00	17.00	19.00	14.30	7.00	80.30
185.	EDUC.-2	18	F	2	26.00	21.00	19.00	13.70	16.00	95.70

Respondents Code	Specialization	Age	Sex	HD Score	Listening	Speaking	Reading	Writing	Cloze	Global
186.	EDUC.-2	18	F	-1	29.00	23.00	17.00	14.30	13.00	96.30
187.	EDUC.-2	18	F	-2	26.00	19.00	16.00	14.70	14.00	89.70
188.	EDUC.-2	17	F	-3	26.00	21.00	20.00	15.30	14.00	96.30
189.	EDUC.-2	18	F	2	20.00	10.00	16.00	10.00	6.00	62.00
190.	EDUC.-2	18	F	0	20.00	14.50	16.00	13.00	4.00	67.50
191.	EDUC.-2	18	F	2	17.00	19.00	13.00	13.00	13.00	75.00
192.	EDUC.-2	19	F	-4	17.00	21.50	17.00	12.00	12.00	79.50
193.	EDUC.-2	18	F	3	27.00	23.00	16.00	15.30	5.00	86.30
194.	EDUC.-2	17	F	-1	29.00	20.50	21.00	13.30	11.00	94.80
195.	EDUC.-2	19	M	-4	21.00	20.00	12.00	17.00	8.00	78.00
196.	EDUC.-2	18	M	-3	25.00	19.00	19.00	14.70	11.00	88.70
197.	EDUC.-2	18	M	0	12.00	16.00	18.00	12.70	8.00	66.70
198.	EDUC.-2	19	M	-4	23.00	13.50	16.00	14.00	11.00	77.50
199.	EDUC.-2	17	M	0	23.00	13.00	18.00	14.30	14.00	82.30
200.	EDUC.-2	18	M	1	23.00	16.00	20.00	14.70	11.00	84.70
201.	EDUC.-3	19	F	-3	21.00	13.00	18.00	10.00	15.00	77.00
202.	EDUC.-3	19	F	-4	30.00	14.00	26.00	13.00	19.00	102.00
203.	EDUC.-3	19	F	0	15.00	12.00	16.00	13.70	12.00	68.70
204.	EDUC.-3	20	F	-3	19.00	13.00	12.00	13.00	15.00	72.00
205.	EDUC.-3	21	F	-3	13.00	11.50	15.00	11.30	13.00	63.80
206.	EDUC.-3	22	F	-1	12.00	12.00	15.00	8.00	9.00	56.00
207.	EDUC.-3	19	F	-2	20.00	15.00	20.00	14.30	7.00	76.30
208.	EDUC.-3	19	M	1	20.00	17.00	18.00	14.00	9.00	78.00
209.	EDUC.-3	19	F	-1	20.00	14.00	18.00	10.70	17.00	79.70
210.	EDUC.-3	19	M	-5	21.00	18.00	11.00	10.70	11.00	71.70
211.	EDUC.-3	18	M	-3	19.00	15.00	23.00	11.00	12.00	80.00
212.	EDUC.-3	19	F	-5	17.00	15.00	15.00	13.00	14.00	74.00
213.	EDUC.-3	20	M	-1	23.00	11.00	25.00	13.30	18.00	90.30
214.	EDUC.-3	19	M	-6	21.00	14.00	23.00	13.00	14.00	85.00
215.	EDUC.-3	20	F	-3	13.00	12.00	11.00	12.00	11.00	59.00
216.	EDUC.-3	21	M	-4	18.00	12.00	15.00	13.00	11.00	69.00
217.	EDUC.-3	19	F	1	14.00	13.00	17.00	16.30	13.00	73.30
218.	EDUC.-3	19	M	-2	23.00	14.00	10.00	14.00	15.00	76.00
219.	EDUC.-3	18	F	-2	27.00	16.00	18.00	14.40	16.00	91.40
220.	EDUC.-3	20	F	-3	21.00	18.00	16.00	17.00	15.00	87.00
221.	EDUC.-4	20	F	-1	24.00	18.00	20.00	17.00	9.00	88.00
222.	EDUC.-4	20	F	-3	20.00	13.30	16.00	15.00	12.00	76.30
223.	EDUC.-4	21	F	-2	22.00	16.30	15.00	14.70	9.00	77.00

Respondents Code	Specialization	Age	Sex	HD Score	Listening	Speaking	Reading	Writing	Cloze	Global
224.	EDUC.-4	18	F	-2	21.00	18.30	19.00	11.00	15.00	84.30
225.	EDUC.-4	20	F	-5	18.00	17.30	17.00	12.30	15.00	79.60
226.	EDUC.-4	20	F	-5	31.00	21.70	21.00	15.00	11.00	99.70
227.	EDUC.-4	20	F	-4	24.00	21.30	16.00	14.30	8.00	83.60
228.	EDUC.-4	20	F	-2	15.00	16.00	15.00	16.70	14.00	76.70
229.	EDUC.-4	29	F	0	9.00	19.00	16.00	11.00	9.00	64.00
230.	EDUC.-4	19	F	-2	15.00	16.30	20.00	15.00	7.00	73.30
231.	EDUC.-4	20	F	-3	22.00	15.70	18.00	12.70	14.00	82.40
232.	EDUC.-4	20	F	0	24.00	21.00	21.00	15.30	8.00	89.30
233.	EDUC.-4	19	F	-1	27.00	18.30	15.00	15.70	17.00	93.00
234.	EDUC.-4	21	M	-1	23.00	17.00	15.00	15.30	17.00	87.30
235.	EDUC.-4	24	M	-1	19.00	13.50	17.00	9.00	19.00	77.50
236.	EDUC.-4	21	F	-4	10.00	19.00	10.00	16.70	11.00	66.70
237.	EDUC.-4	20	M	-1	24.00	13.30	9.00	14.00	11.00	71.30
238.	EDUC.-4	20	M	-4	17.00	13.00	13.00	11.00	11.00	65.00
239.	EDUC.-4	23	M	2	22.00	18.70	15.00	11.30	6.00	73.00
240.	EDUC.-4	20	M	3	20.00	18.30	14.00	14.70	14.00	81.00

APPENDIX B

Hemispheric Dominance Test

Directions: Answer the questions carefully. Select the one that most closely represents your attitude or behavior. Then, on your answer sheet, encircle the letter which corresponds to your answer.

1. I prefer the kind of classes
a. Where I listen to an authority
b. In which I move around and do things
c. Where I listen and also do things.

2. Concerning hunches:
a. I would rather not rely on them to help me make important decisions.
b. I frequently have strong ones and follow them.
c. I occasionally have strong hunches but usually I do not place much faith in them or consciously follow them.

3. Staying organized:
a. Comes easily to me
b. Is often difficult for me
c. Is sometimes hard for me

4. When I want to remember directions, a name, or a new item, I usually
a. write notes
b. visualize the information.
c. Associate it with previous information I several different ways.

5. In note taking, I print:
a. never
b. frequently
c. sometimes

6. I prefer the kind of classes:
a. where there is one assignment at a time, and I can complete it before beginning the next one.
b. Where I work on many things at once.
c. I like both kinds about equally.

7. when remembering things or thinking about thing, I do best with
a. words
b. pictures and images
c. both equally well

8. In reviewing instructions, I prefer:
a. To be told how to do something.
b. To be shown how.
c. No real preference for demonstration over oral instruction.

9. I prefer:
a. dogs
b. b. cats
c. no preference for dogs over cats or vice versa.

10. I am:
a. almost never absentminded
b. frequently absentminded.
c. Occasionally absentminded.

11. Do you instinctively feel an issue is
   right or correct, or do you
       decide on the basis of
information?
a. a decide on the basis of information
b. Instinctively feel it is right or correct.
c. I tend to use a combination of both.

12. I have:
a. no or almost no mood changes.
b. B. frequent mood changes.
c. Occasional mood changes.

13. I am:
a. easily lost in finding directions,
   especially if I have never been to a
   place before.
b. Good at finding my way, even if I
   have never been in that area.
c. Not bad in finding directions, but
   one thing.

14. I get motion sickness in cars and
   boats:
a. hardy ever
b. a lot
c. sometimes

15. I generally:
a. use time to organize work and
   personal activities.
b. Have difficulty in pacing personal
c. Usually am able to pace personal
   activities to time limits with ease

16. I prefer to learn:
a. details and specific facts.
b. From general overview of things,
   and to look at the whole picture.
c. Both ways about equally.

17. I learn best from teachers who:
a. are good at explaining things with
   words.
b. Are good at explaining things with
   demonstration, movement, and/or
   action.
c. Do both

18. I am good at:
a. explaining things mainly with words.
b. Explaining things with hand
   movements and action.
c. Doing both equally well.

19. I prefer to solve problems with:
a. logic
b. my "gut feelings"
c. both logic and "gut feelings"

20. I prefer:
a. simple problems and solving one
   thing at a time.
b. More complicated problems more
   than not really good either.
c. Both kinds of problems,

21. daydreaming is:
a. a waste of time.
b. a usable tool for planning my future.
c. a amusing and relaxing.

22. I prefer classes in which I am
   expected:
a. to learn things I can use in the future
activities to time limits.
b. to learn things I can use right away
c. I like both kinds of classes equally.

23. I am:
 a. not very conscious of body language. I prefer to listen to what
    people say.
 b. good at interpreting body language
 c. both planned and open to change.

24. In school. I preferred:
 a. algebra.
 b. Geometry.
 c. I had no real preference of one over the other.

25. In preparing myself for a new and difficult task, such as assembling a bicycle. I would most likely:
 a. lay out all the parts, count them, gather the necessary tools and follow the directions.
 b. Glance at the diagram and being with whatever tools were there, sensing how the parts fit.
 c. Recall past experiences in similar situation.

26. In communicating with other. I am more comfortable being the:
 a. talker.
 b. Listener.
 c. I'm usually comfortable with both.

27. I can tell fairly accurately how much time has passed without looking at the clock.
 a. Yes
 b. No
 c. Sometimes.

28. I like my classes or work to be:
 a. planned so that I know exactly what to do.
 b. Open with opportunities for change as I go along.
 c. Both planned and open to change.

29. I prefer
 a. multiple – choice test.
 b. essay test
 c. a combination of essay and multiple-choice test

30. In reading, I prefer:
 a. taking ideas apart and thinking about them separately.
 b. Putting a lot of ideas together before applying them to life.
 c. Both equally.

31. when I read I prefer to look for:
 a. specific details and fact
 b. main ideas
 c. doing both equally

32. I enjoy:
 a. taking and writing
 b. drawing and handling things
 c. doing both equally

33. It is more exciting to:
 a. improve something.
 b. Invent something.
 c. Both are exciting to me.

34. I am skilled in:
 a. putting ideas in a logic order
 b. showing relationships among ideas.
 c. Both equally

35. I am good at:
a. recalling verbal material (names, ideas)
b. recalling visual material (diagrams, maps)
c. equally good at both.

36. I have an easy time remembering:
a. names
b. faces
c. both names and faces

37. When reading or studying, I:
a. prefer total quiet.
b. Prefer music.
c. I listen to background music only when reading for enjoyment, not while studying.

38. I like to learn a movement in sport or a dance step better by:
a. hearing verbal explanation and repeating the action or step mentally
b. watching and then trying to do it
c. watching and then imitating and talking about it

39. Sit in relaxed position and place your hands comfortably in your lap. Which thumbs is on top?
a. Left.
b. Right.
c. They are parallel.

40. My homework usually gets done:
a. the day it's assigned
b. at the last minute
c. before its due, either right away or right before the deadline.

Hemispheric Dominance Test

Answer sheet

Respondent's Code No. _____Sex/Gender: _____

Age: _____   _____   _____   Course & year: _____

    Years   Months   Day

1. a b c

2. a b c   11. a b c   21. a b c   31. a b c

3. a b c   12. a b c   22. a b c   32. a b c

4. a b c   13. a b c   23. a b c   33. a b c

5. a b c   14. a b c   24. a b c   34. a b c

6. a b c   15. a b c   25. a b c   35. a b c

7. a b c   16. a b c   26. a b c   36. a b c

8. a b c   17. a b c   27. a b c   37. a b c

9. a b c   18. a b c   28. a b c   38. a b c

10. a b c   19. a b c   29. a b c   39. a b c

                    20. a b c   30. a b c   40. a b c

c Score =_____HDT TOTAL SCORE: 40

a Score=_____

b Score=_____

Reading Comprehension Test

Test Sheet

Directions: this test composed of eight (8) passages. Each is followed by questions about its contetnt. Select the best answer on what is stated or implied in the passage. Then, on your answer sheet, find the number of the question and blacken the circle under the letter which corresponds to your answer. You are given 45 minutes to finish this test, PLEASE, DO NOT WRITE ANYTHING ON THE TEST SHEET.

Begin Here:

It is said that every life has roses and thorns: there seemed, however, to have been a misadventure or mistake in Stephen's case, whereby somebody else had become possessed of his roses, and he had become possessed of the same somebody else's thorns in addition to his own.

1. Stephen's life must have been

         a. Colorless   c. rewarding
         b. Hard   d. Exciting

2. The "somebody else" must have been
         a. Mistaken   c. happy
         b. reedy   d. jealous

A man who is remarkable for his memory seems to keep his entire intellectual stock in his front window, and there is no use waiting to grope and rummane, because he has nothing hidden away anywhere. The forgetter, on the other hand, is always new and surprising, even to himself, he has fewer facts but many more ideas than the remembered, and it is a joy to see him fish his thoughts up one after another out of his own depths, with a frank astonishment that he should contain such things.

3. The passage suggests that a person with a good memory is like a
         a. Fisherman   c. Shopkeeper
         b. Miser   d. Peddler

4. The passage tells how a forgetful person is often

         a. Delightful   c. Boring
         b. Impatient   d. Funny

5. The passage says that a forgetter is rich in
      a. Facts
      b. Question
      c. Excuse
      d. Ideas

The iditaerod sled has once again woven its way across miles of barren country in Alaska. Inspired by a sled-dog relay of serum to Nome for a diphtheria outbreak in 1973, it has continued each year along the storm-raked coast. The mushers race across 1168 miles from Anchorage to Nome, stopping only to get food for themselves and their dogs, and to sleep in campus or homes along the way. Temperatures often hover around zero with the wind chill gactor droping the temperature to minus 20 degrees or more. The winner gets as much as $50,000, but only the hardest competitors can enter the unique race.

6.   what is the author's most likely feeling about this race and its competitors?
      a. Respect
      b. Fear
      c. Amusement
      d. Worry

7.   The word it in line 3 refers to
      a. Nome
      b. Diphtheria
      c. The race
      d. Serum

8.   Which of the following statement is NOT true according the passage?
      a. There has been diphtheria in Alaska since 1973
      b. The racers stop only to eat and sleep
      c. The race is more than 1000miles long
      d. It can be very cold during the race.

9.   The author implies that the coastal areas of Alaska
      a. Have illness such as diphtheria
      b. Are very stormy
      c. Are very warm
      d. Are places to make money

10.   What word can be best substituted for the word hardiest in the last sentence.
      a. Heaviest
      b. Most outgoing
      c. Friendliest
      d. Strongest

Edwin forrest, often acknowledged as America's first national idol of American theater, was born in Philadelphia in 18 06. He has only 14 years old when he played Young Norval in Home's Douhlas. He gained experience supporting Edmund Kean in Shakespearean roles. In 1826 he established himself as one of the great tragedians of the century with his role as Othello in a New York debut. His acting was bold and forceful through he was also criticized for his boating and loud language. His violent temper did not injure his reputation as an actor, through, and his last appearance as Richelieu in Boston in 1871 was greeted with acclaim.

11. Which of the following statements is best supported by this passage?
  a. Though Edwin Forrest was criticized, his reputation was not damaged.
  b. Forrest was a great actor. But was brought down by his uncontrollable temper.
  c. Though bold in his acting, in reality Forrest's life was a tragedy.
  d. Forrest became a national idol at age 14, but was ruined later.

12. Which of the following roles was not one that Forrest played?
  a. Young Norval   c. Othello
  b. Edmund Kean   d. Richelieu

13. According to the author Forrest was
  a. Angry   c. Satisfied
  b. Temperamental   d. Creative

14. The word injure in line 7 could best be replaced by which of the following?
  a. Support   c. Damage
  b. Critique   d. Offend

15. According to the passage, what happened in 1826?
  a. New York produced a new tragedian.
  b. Forrest was in a New York play.
  c. Forrest made his first debut.
  d. Othello became known as a great tragedy.

What is the cause of chronic fatigue syndrome? Past research has suggested a link to the Epstein-Barr virus, but now many scientists are questioning that connection. New findings suggest that the Epstein-Barr virus is not a primary cause, but it may still trigger the illness. The symptoms may be due to a variety if things, rather than just one. Still, some researchers are sticking with the idea of Epstein-Barr virus causing the illness. They say that it is premature to make such a judgment.

Chronic fatigue syndrome has been dubbed the "yuppie disease" by some since it is often diagnosed in professional women in their twenties and thirties. It may be the result of never recovering completely from illness such as the flu. Though the cause is not clear, the symptoms are. To be called a chronic fatigue suffer, one must have the debilitating illness for more than six months and must exhibit at least eight of the eleven symptoms, including sore throat, mild fever, and muscular aches.

16.   With which of the following subjects is the passage mainly concerned?
   a.   A disagreement between scientist
   b.   Diseases affecting yuppies
   c.   Causes and symptoms of an illness
   d.   The relationship between a virus and an illness.

17.   Why is this illness often called the "yuppie disease?
   a.   it affects so many young professional women
   b.   it has so many symptoms
   c.   it is difficult to treat
   d.   no one knows for sure what causes it.

18.   According to the passage, a sufferer of chronic fatigue syndrome
   a.   Will be sick for about six months
   b.   Will have had the flu
   c.   Will have eleven symptoms
   d.   Will have sore throat, aches, and fever

19.   According to the passage, which of the following statement about chronic fatigue syndrome is best supported?
   a.   A sufferer might never recover from it.
   b.   Scientists don't agree on the cause.
   c.   It is more common among women than men.
   d.   The Epstein-Barr virus can cause premature effects of the illness

20.   Chronic fatigue syndrome will cause which of the following?
   a.   Weakness   c.   Rash
   b.   Vomiting   d.   Dizziness

Loved and admired by all who knew him, Tony Lazzeri became a victim of the passage of time. His marvelous achievements were known long before the advent of television, but it is only just recently that his name has been added to the Bay Area

Sports Hall of Fame. Old-timers still insist that the 1927 Yankees were the best baseball team of all time. Besides Lazzeri, the famous names included Joe DiMaggio, Lefty Gomez, and Frank Crossetti. There are stories of how the opposing teams were deducted to jelly before the game even started just by watching the Yankees take batting practice. It was Lazzeri who seemed to hold the team together. As one of his teammates recalled, "Tony not only was a great ballplayer, he was a great man. He was a leader. He would call the signals for such maneuvers as the hit-and-run. He took baseball very seriously. Tony's inauguration in to the Bay Area Sport Hall of Fame was posthumous since Tony died of a heart attack in 1946 when he was only 42. For many who idolized Tony, this inauguration was nice, but not enough. He should be in the bi Hall of Fame, the one in Cooperstown," they say.

21.   With which of the following subjects is the passage mainly concerned?
    a.   The formation of a famous baseball team
    b.   The death of Tony Lazzeri
    c.   Maneuvers that make ballplayers great
    d.   Why Lazzeri had such a reputation.

22.   DiMaggio, Gomez Crosetti, and Lazzeri were all
    a. victims   c. Batters
    b. Yankees   d. Teams
    23. The phrase reduced to jelly in line 6 most likely means that the oipposing teams were
    a. Nervous   c. Made to feel small
    b. Beaten up   d. Very thoughtful

24.   The author implies that Lazzeri was a man who
    a. Provided strength to the team
    b. Idolized baseball
    c. Rarely got tired while playing
    d. Enjoyed being famous

25.   What is in Cooperstown?
    a. Tony Lazzeri's grave   c. A hall of Fame
    b. The Yankee stadium   d. A baseball team

When Robert had finished reading, there was the unusual disturbed pause that occurs at the end anyone's reading anything. Miss Mcgee sat at the other end of the warning fire, lied up in a knot and wandering what on earth she could say. She wanted to say something very nice indeed and, naturally, the more she wanted, the less she could attain.

The fact was, of course, that there was a lot in the manuscript she hadn't understood, and she was afraid of saying anthing at all in case she made a fool of herself. For a while, it was a drawn battle between Miss McGee's two halves, and then after a minute or so of complete silenece, which seemed like and eternity to both of them, she said in a small voice, " Oh my, Mr.Fulton, that's lovely, eh! It was a very stimulating remark. It was even a silly remark. But Robert Fulton felt good deal heartened even stimulated by it.

26. This passage describes a moment of
 a. Discovery
 b. joy
 c. tenderness
 d. awkwardness

27. Miss McGee found much of the manuscript
 a. Difficult
 b. Silly
 c. Boring
 d. Stimulating

28. The drawn battle was between
 a. Robert and Miss McGee
 b. Robert's pride and fear
 c. Miss McGee's shame and Robert's pride
 d. Miss McGee's opposing feeling

29. Miss McGee's remark was
 a. Unkind
 b. Hasty
 c. Sorrowful
 d. Not very clever

30. After Miss McGee spoke, Robert felt
 a. Like a fool
 b. Encouraged
 c. Intelligent
 d. Annoyed

Some times what animals communicate through the sense of touch is not specific information but something like reassurance, vague in content though highly effective. Wood lice, also called sow bugs, often found under decaying logs, are quarter-inch-long, grayish creatures equipped with even pairs legs. More closely related to lobsters and shrimps than to insect, they do not form cooperative colonies like the ants and bees, but when conditions are right, the numbers under any given log may be so numerous that they are almost constant physical contact with one another. The interesting point here is that wood lice in such dense groups tend to live longer that isolated individuals. Frequently physical contact with others of their kind apparently communicates to them some unknown stimuli.

31. Wood lice are most like
   a. Fleas
   b. Ant
   c. Shrimps
   d. Worms

32. When many wood lice live under the same log; they tend to be
   a. Cooperative
   b. In constant contact
   c. Less healthy
   d. Under-sized

33. The longest living wood lice are those that live
   a. In dense groups
   b. Alone
   c. In colonies
   d. In pairs

34. The passage suggests that isolated individuals may have less
   a. Disease
   b. Reassurance
   c. Anxiety
   d. Food

35. The topic of the passage is
   a. Crowing
   b. Animal colonies

   c. How long animals live
   d. Non-specific
      communication

READING COMPREHENSION TEST

Answer Sheet

Respondent's Code No. _____   Score: _____

A B C D
1. 0 0 0 0

A B C D
2. 0 0 0 0

A B C D
3. 0 0 0 0

A B C D
4. 0 0 0 0

A B C D
5. 0 0 0 0

A B C D
6. 0 0 0 0

A B C D
7. 0 0 0 0

A B C D
8. 0 0 0 0

A B C D
9. 0 0 0 0

A B C D
10. 0 0 0 0

A B C D
11. 0 0 0 0

A B C D
12. 0 0 0 0

A B C D
13. 0 0 0 0

A B C D
14. 0 0 0 0

A B C D
15. 0 0 0 0

A B C D
16. 0 0 0 0

A B C D
17. 0 0 0 0

A B C D
18. 0 0 0 0

A B C D
19. 0 0 0 0

A B C D
20. 0 0 0 0

A B C D
21. 0 0 0 0

A B C D
22. 0 0 0 0

A B C D
23. 0 0 0 0

A B C D

A B C D
24. 0 0 0 0

A B C D
25. 0 0 0 0

A B C D
326. 0 0 0 0

A B C D
27. 0 0 0 0

A B C D
28. 0 0 0 0

A B C D
29. 0 0 0 0

A B C D
30. 0 0 0 0

A B C D
31. 0 0 0 0

A B C D
32. 0 0 0 0

A B C D
33. 0 0 0 0

A B C D
34. 0 0 0 0

A B C D
35. 0 0 0 0

A B C D

APPENDIX D

Listening Comprehension Test

Typescripts

Example 1:

    Mary swan out to the island with her friend.

Example 2:

    Would you mind helping me with this load of books?

TO THE READER: Pause twelve seconds after each question.

1. Is the airport located around here?

2. Send me the information as soon as possible.

3. Jane followed in her mother's footsteps by teaching disabled children.

4. The kids can go and confident.

5. Sam looks cool and confident.

6. It was a winding and muddy road.

7. Alan never neglects to rehearse before his performance.

8. Diane's allergy has gone from bad to worse.

9. It's going to be all right/

10. Did you two give up the class?

11. I'm sorry; I thought you were a friend of mine

12. He acts like and adult, but he is only a junior high school student.

13. Dr. Stevenson will probably be elected as the department chair this year, won't she?

14. Are you sure you have a reservation for dinner?

15. Sam ordered cheese cake for dessert this time, although he likes apple pie better.

Part B

Example:

Man: Professor Smith is going to retire soon. What kind of gift shall we give her?

Woman: I think she'd like to have a photograph of our class.

What does the woman think the class should do?

TO THE READER: Read the sentences below. Pause twelve seconds after each questions.

16.   Woman: Thanks for the help.

        Man No problem.

        What does the man mean?

17.   Women I can't get through to this number.
        Men: You must first dial one.

        What do we learn from this conversation?

18.   Woman: did you mow the lawn?

        Man: I had the neighbor boy take care of it.

        What does the man mean?

19.   Woman: are there any dogs around?

        Man: No, they're not allowed in this conversation.

20.   Man: This one is much cheaper.

Woman: But it may not last as long.

What does the woman Imply?

21.   Man: Did you ever get touch with your friend?

Woman: No, when I called, all got was a recorded message.

What did the woman do?

22.   Man: Are you sure?

Woman: Of course I am.

What does the woman mean?

23.   Woman: could you OK this request for me?

Man: Sure, may I use your pen?

What does the man need to do?

24.   Woman: Is it possible to see the apartment before we rent it?

Man: You bet, it's vacant.

What does the man mean?

25.   Man: you left your lights on!

Woman: Oh, thanks a lot.

What do we learn from the conversation?

Part C

Sample talk:

Balloons have been used for about a hundred years. There are two kind of sport balloons: gas hot air. Hot air balloons are safer than gas balloons, which may catch fire. Hot air balloons are preferred by most balloonist in United States because of their

safety. They are also cheaper and easier to manage than gas balloons. Despite the ease of operating a balloon, pilots must watch the weather carefully. Sport balloon flights are best in the morning or early afternoon when the wind is light.

Example 1:
Why are gas balloons considered dangerous?

Example 2:
According to the speaker, what must balloon pilots be careful to do?

Questions 26 through 30 are based on the following announcement made at the beginning of the university class.
(MALE VOICE)

Hi. My name is John. I'm your teaching assistant for chemistry IA, Professor Smith's class. Let me explain a little about this lab section. It's a required meeting, twice a week. I expect you to do all the experiments and keep the result in your lab notebooks, I'll collect the notebooks every two weeks. You'll be graded on your lab notebooks, your attendance and quizzes. But the most important information I want to give you today is about the safety procedures.'

First of all, you must wear shoes that cover you feet in the lab. That means you can't wear thongs and sandals. Tennis shoes are OK. Also, don't wear clothes that have loose baggy part, like long scarves and necklaces or loose belts. They could get caught in something or fall into a liquid.

Another important safety precaution is cleaning up. Be sure the waste in the correct containers. We can't mix liquid with paper. This is extremely important. I don't want any fires in this room.

You are responsible for washing out your own lab equipment and putting it away. If you don't do this, I will deduct points from your grades. I'm not going to clean up after you.

OK. That's about all for this meeting. Our first regular class will be next week. Be sure to get a lab notebook before then. Also, let professor Smith know that you are attending this section.

TO THE READER: pause twelve seconds after each question.

26. Who is the speaker of this talk?

27. How often does this class meet?

28. what is the main purpose of the speaker's talk?

29. which of the following can be worn in the lab?

30. what must the student do before the next class?

Question 31 through 35 are based on the following conversation.

Man: Did you see the play " A Midsummer Night's Dream" last night?

Woman: I do too. You know, I'm taking a class in Shakespeare now. Did you know that a lot of people are saying that Shakespeare isn't the man we think he was?

Woman: well, I've hear something about that, but I can't remember exactly what people are saying. What have you heard?

Man: well, my professor was just discussing this yesterday. In most books it is written that Shakespeare was born in Stratford – on – Avon.

Woman: Yeah, I know that.

Man: But for this man who was called Shakespeare, or Shagsper, or something that sounds like that, there is no evidence that he was literate. There are a few signatures that are written like an illiterate man that there is nothing else – not a single letter, not single clue that he might have been a writer. And his parent were illiterate and so were his daughters' In additional there is no evidence that he owned a single book or that he ever went to school. In fact there is no evidence that there even was a school in the little village of Stratford.

Woman: Wow, what a mystery. I didn't know all that. So what does your professor say about who wrote the plays?

Man: well, one likely candidate is the Earl of Oxford, but nobody knows for sure. The Earl was a lord and a leading member of the court, so he couldn't sign his name to his own work. It seems possible that the Earl of Oxford, whose name was Edward de Vere, Might have used William Shakespeare's name to fool people.

Woman: But what about this Shakespeare then? Wouldn't he know his name was being used?

Man: Yes. So now some people are saying that the Earl of Oxford gave money to Shakespeare to keep him quiet. And that's the money that he used to build the house that tourist all go to now in Stratford!

Woman: What a story. I winder if it's true? I think I'll go read more about the Earl of Oxford!

TO THE READER: pause twelve seconds after each question.

31. what is the main topic of this conversation?

32. What led to this conversation?

33. According to the conversation, who might have written the Shakespeare plays?

34. According to the conversation, what do tourist do?

35. What is the woman interested in doing now?

Listening Comprehension Test

Test Sheet

Time – Approximately 30 minutes

In this section of the test, you will have an opportunity to demonstrate your ability to understand spoken English. There are three part to this selection, with special direction for each part. NO EXTRAPAPERS IS ALLOWED, AND PLEASE, DONOT WRITE ANYTHING ON THIS TEST QUESTIONNAIRE.

Part A

Directions: Fro each question in Part A, you will hear a shot sentence. Each sentence will be spoken just one time. The sentences you hear will not be written out for you. Therefore, you must listen carefully to understand what the speaker says.

After you hear a sentence, read the four choices in your test sheet, marked (A), (B), (C), and (D), and decide which one is closest in meaning to the sentence you heard. Then, on your answer sheet, find the number of the question and blacken the circle under the letter which corresponds to the answer you have chosen.

Example 1:

    You will hear: Sample Answer

                                                 A   B   C   D

                                               0   0   0   0

    You will read;

    (A) Mary outswam the others.
    (B) Mary ought to swim with them
    (C) Mary and her friends swam to the island.
    (D) Mary's friends owned the island.

The speaker said, "Mary swam out to the island with her friends." Sentence ©, "Mary and her friends swam to the island", is closest in meaning to the sentence you heard. Therefore, you should choose answer ©.

Example 2:
    You will hear;   A   B   C   D
                                        0   0   0   0

You will read:

      (A) Please remind me to read this book.
      (B) Could you help me carry these books?
      (C) I don't mind if you help me.
      (D) Do you have a heavy course load this term?

The speaker said, "Would you mind helping me with this load of books"? Sentence (B), "Could you help me carry these books"? is closest in meaning to the sentence you heard. Therefore, You should choose answer (B).

START HERE:

1. (A) is there a circular drive around the airport?
      (B) How big is the airport?
      (C) Is the airport close?
      (D) Is this an international airport?

2. (A) The information won't come today
    (B) Bring me the information tomorrow.
      (C) Mail it to me at your earliest convenience.
      (D) Your speech is very informative.

3. (A) Jane is a teacher.
      (B) Jane's mother doesn't want to teach.
      (C) Jane takes care of her children at home.
      (D) Jane's stepmother doesn't like her.

4. (A) The mother teaches the children at home.
      (B) Adults like him because he is active.
      (C) He behaves like a junior high school student.
      (D) Children should wear shoes.

5. (A) Sam shouldn't be cruel.
      (B) Sam is calm.
      (C) Sam is cooling himself down.
      (D) Please make yourself comfortable.

6. (A) the road was not straight
      (B) It was windy.
      (C) The road was just completed.
      (D) The road was wide.

7. (A) Alan's rehearsal was canceled.

      (B) Alan went to the rehearsal meeting.
      (C) Alan slept through the performance,
      (D) Alan always rehearses before a show.

8. (A) Diane is not getting better.
      (B) It is bad enough to have a headache.
      (C) Diane is completely satisfied.
      (D) Bad weather doesn't effect Diane

9. (A) All right, let's do it again.
      (B) Turn to the right or left.
      (C) You can't do it all correctly.
      (D) Don't worry, everything will be OK.

10. (A) Did you like the class, too?
      (B) Nobody can drop the class after today.
      (C) Did both of you stop going to class?
      (D) We, too, want to join the class.

11. (A) Excuse me, my friend.
      (B) Excuse me, my friend.
      (C) I feel sorry that you are not my friend.
      (D) I don't think you are my friend.

12. (A) He doubts that he will become a junior high school student.
      (B) Adults like him because he is active.
      (C) He behaves like a junior high school.
      (D) Even though he is still in junior high school, he acts grown up.

13. (A) Dr. Stevenson earns a good salary as a department chair.
      (B) Dr. Stevenson is fortunate this year, isn't she?
      (C) Dr. Stevenson doesn't want to be involved in administration, isn't she?
      (D) Do you think Dr. Stevenson will become the department chair this year?

14. (A) Have you been to this restaurant before?
      (B) Are you certain you made a reservation?
      (C) I am not sure you want to stay hare.
      (D) When did you make you r reservation?

15. (A) Sam prefers apple pie to cheese cake.
      (B) Sam ordered cheese cake for his friend.
      (C) Apple pie is better for Sam than cake.
      (D) Sam ordered the one he likes the best.

Part B.

Directions: In part B, you will hear short conversation between two speakers. At the end of each conversation, a third person will ask a question about what was said. You will hear each conversation and question about it just one time. Therefore, you must listen carefully to understand what each speaker says. After you hear a conversation and question about it, read the four possible answers in your test sheet and decide which one is the best answer to the question you heard. Then, your answer sheet, find the number of the question and blacken the circle under the letter corresponds to the answer you have chosen.

Example:

You will hear: Sample answer

                                                         A   B   C   D

                                                         0   0   0   0

You will read:

(A) Present Professor Smith with a picture.
(B) Photograph Professor Smith.
(C) Put glass over the photograph.
(D) Replace the broken headlight.

From the conversation you learn the woman thinks Professor Smith would like a photograph of the class. The best answer to the question "what does the woman think the class should do"? is (A), " Present Professor Smith with a Picture." Therefore, you should choose answer (A).
START PART B HERE:

16. (A) He doesn't mind helping her.
    (B) He has some problems.
    (C) He is very busy.
    (D) He had to help her.

17. (A) They are discussing a math content.
    (B) The woman is making a telephone call.
    (C) A department store is having a scale.
    (D) The post office is closed.

18. (A) He asked someone else to mow lawn.
    (B) Nobody mowed the lawn.
    (C) He will wait until next week.

(D) He had a problem with his lungs.

19. (A) The law is too complicated to understand.
    (B) It's good to have a dog around the house.
    (C) No dogs are allowed in the area.
    (D) Unfortunately, they don't have nay dogs.

20. (A) This is the last one.
    (B) The longer style is better.
    (C) You should buy cheaper merchandise.
    (D) It might be of good quality.

21. (A) She fixed her friend's tapes recorder.
    (B) She tried to telephone her friend.
    (C) She went to her friend's house.
    (D) She arranged to meet her friend later.

22. (A) She is happy.
    (B) She is joking.
    (C) She is certain.
    (D) She is busy.

23. (A) Give his approval.
    (B) Buy a pen.
    (C) Write an essay.
    (D) Go back to work.

24. (A) No one lives there now.
    (B) You'd better make an appointment.
    (C) You can see it after your vacation.
    (D) It's a beautiful place.

25. (A) The woman forgot that her lights were on.
    (B) The woman needed more light.
    (C) The man helped a woman carry a heavy load.
    (D) The man picked up the woman's glasses.

Part C

Directions: In this part of the test, you will hear longer talks and conversations. After each of them, you will be asked some questions. You will hear the talks and conversations

and the questions about them just one time. They will not be written out for you. Therefore, you must listen carefully to understand what each speaker says.

After you hear a question, read the four possible answer in your test sheet and decide which one is the best answer to the question you heard. Then, on your answer sheet, find the number of the question and blacken the circle under the letter that corresponds to the answer you have chosen.

Answer all questions on the basis of what is stated or implied in the talk or conversation.

Listen to this sample talk:

Example 1:

> You will hear: Sample answer
>
>   A   B   C   D
>   0   0   0   0
>
> You will read:
> (A) They are impossible to guide.
> (B) The may go up in flames.
> (C) They tend to leak gas
> (D) They are cheaply made.

The best answer to the question "why are gas balloons considered dangerous?" is (B), "they may go up in flames. "Therefore, you should choose answer (B).

Example 2:

> You will hear: Sample answer
>   A   B   C   D
>   0   0   0   0
>
> You will read:
> (A) Watch for changes in weather
> (B) Watch their altitude.
> (C) Check for weak sports in their balloons.
> (D) Test the strength of the ropes.

The best answer to the question "According to the speaker, what must balloon pilots be careful to do?" is (A), "Watch for changes in weather." Therefore, you should choose answer (A).

START PART C HERE:

26. (A) Professor Smith
    (B) A teaching assistant
    (C) A socialist in Chemistry
    (D) A university technician

27. (A) Everyday of the week
    (B) One day a week
    (C) Two days a week
    (D) Once every two weeks

28. (A) To teach important safety rules
    (B) To explain the grading procedure
    (C) To demonstrate an experiment
    (D) To tell students what safety equipment to buy

29. (A) Loose scarves
    (B) Scandals
    (C) Long necklace
    (D) Eyeglasses

30. (A) Buy a note book
    (B) wash their lab equipment
    (C) Do an experiment
    (D) Put waste in the proper container

31. (A) the plays of Shakespeare
    (B) The writer of Shakespeare's plays
    (C) The birthplace of Shakespeare
    (D) A discussion of a play

32. (A) A visit to England
    (B) An English literature test
    (C) A discussion with a professor
    (D) A discussion of a play

33. (A) A professor
    (B) The Earl of Oxford
    (C) A tourist
    (D) An literature man

34. (A) Visit Shakespeare's house
    (B) Visit Oxford.
    (C) Learn about the Earl of Oxford.
    (D) See Shakespeare's plays.

35. (A) Reading about the Earl of Oxford
    (B) Seeing a Shakespeare's play
    (C) Taking a class in literature
    (D) Reading more plays

LISTENING COMPREHENSION TEST

Answer Sheet

Respondent's Code No. _____Score:_____

Part A

  A B C D
1. 0 0 0 0

  A B C D
2. 0 0 0 0

  A B C D
3. 0 0 0 0

  A B C D
4. 0 0 0 0

  A B C D
5. 0 0 0 0

  A B C D
6. 0 0 0 0

  A B C D
7. 0 0 0 0

  A B C D
8. 0 0 0 0

  A B C D
9. 0 0 0 0

  A B C D
10. 0 0 0 0

  A B C D
11. 0 0 0 0

  A B C D
12. 0 0 0 0

A B C D
13. 0 0 0 0

  A B C D
14. 0 0 0 0

  A B C D
15. 0 0 0 0

Part B

  A B C D
16. 0 0 0 0

  A B C D
17. 0 0 0 0

  A B C D
18. 0 0 0 0

  A B C D
19. 0 0 0 0

  A B C D
20. 0 0 0 0

  A B C D
21. 0 0 0 0

  A B C D
22. 0 0 0 0

  A B C D
23. 0 0 0 0

  A B C D
24. 0 0 0 0

  A B C D

25. 0 0 0 0

Part C

  A B C D
26. 0 0 0 0

  A B C D
27. 0 0 0 0

  A B C D
28. 0 0 0 0

  A B C D
29. 0 0 0 0

  A B C D
30. 0 0 0 0

  A B C D
31. 0 0 0 0

  A B C D
32. 0 0 0 0

  A B C D
33. 0 0 0 0

  A B C D
34. 0 0 0 0

  A B C D
35. 0 0 0 0
  A B C D

APPENDIX E
Speaking Skill Test
Picture-based Story Telling
(Time Allotment: 10 minutes/student)

Respondent's Code No._____ SKT Score:_____ _____

DIRECTIONS:
1. Study the three pictures attached (in 3 minutes).
2. Using the 3 pictures, invent a brief story and mentally organize it (in 3 minutes).
3. Tell (or narrate orally) your invented story (in 3 minutes).
4. Give a tentative title in 1 minute.

PICTURE I
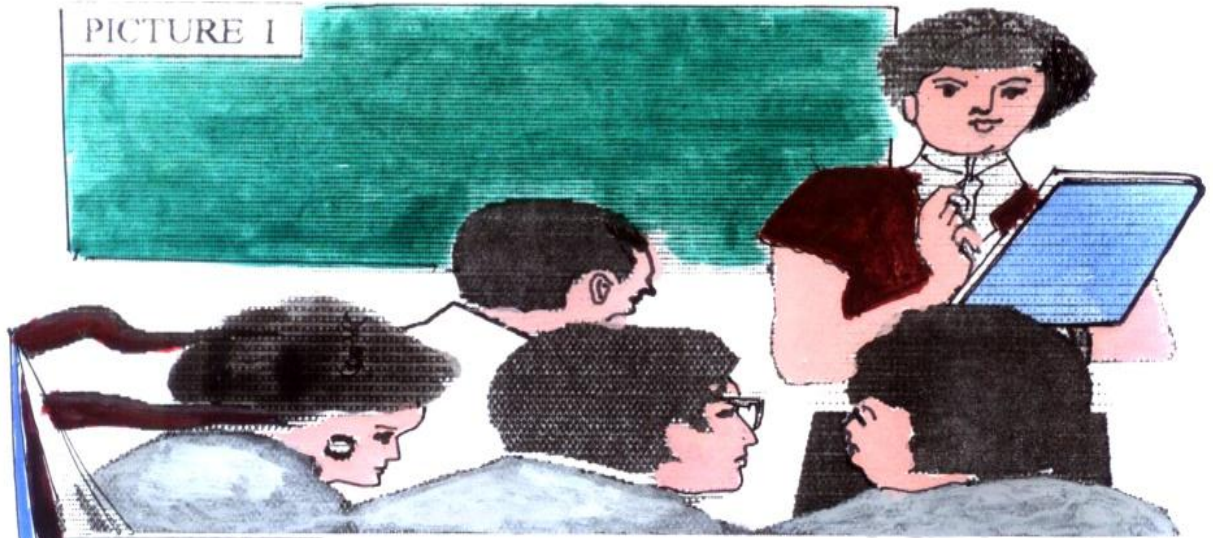
PICTURE II
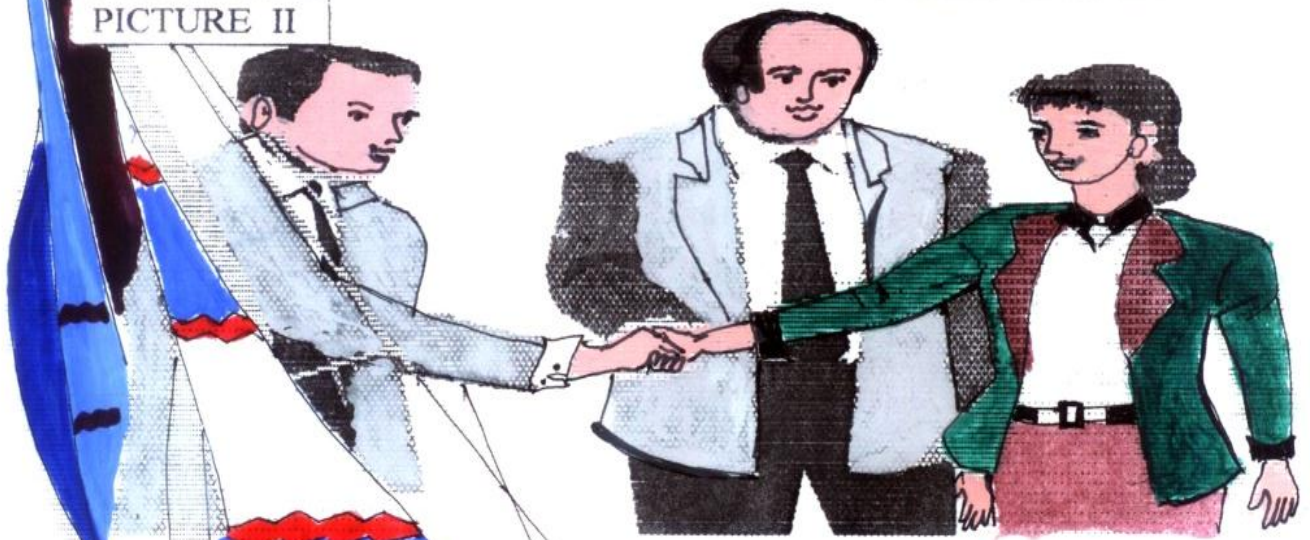
PICTURE III

APPENDIX F

Writing Skill Test

Picture-based Narrative Writing

(Time Allotment: 30 minutes)

Respondent's Code No. _____   WST Score:_____

Directions: On the attached bond paper, write your invented story about the same set of pictures used in the SPEAKING SKILL TEST. If you wish to change your story, you may do so provided new story is still based on the pictures. Don't forget to write tentative title.

AEPENDIX G

Cloze Test

Respondent's Code No._____   Score:_____

Instructions: Below is an incomplete passage about the "Asia". Read the whole
passageand complete it meaningfully by filling in the blanks with
appropriate. Words. Don't start until you are told to do so. Try to finish this
test in 30 minutes.

EXAMPLE:

In view of the community of _____the_____ land mass of Asia and its
_____diversity_____ of the land forms, there are __startling__ contrast in climate in the
various __regions__ of Asia. The center is __more__ than 1,500 miles from the coast
__and__ the lofty mountain ranges prevent the ___moderating__ winds of the ocean from
reading __the__ interior.

START HERE:

Although most of the ancient remains of human existence have been actually
found in Europe, the consensus of scientists in that the original home of the human race
was not in that continent but rather far to the east within the continent of Asia. Thus, it
believe that the Europeans were descended from Asiatic people who

made their way into Europe before the dawn of history. Out of the great racial movements _____ prehistoric time, two general center of _____ developed, each accompanied by growth _____ great civilizations. In western Asia the _____ centers of civilization were found occupying _____ river valleys – the Nile in Egypt _____ the Tigris and Euphrates in _____ Minor. In eastern Asia, ,the valleys _____ the Yellow River in China and _____ of the Indus and the Ganges _____India were the sears from which _____ spread.

The Earlier origin of civilization _____ Asian that in Europe shows the _____ of physical environment. People were attracted _____ the rivers valleys were the fertile _____.abundant water supply and hot, sonny, _____ dry climate made agriculture very productive. _____ they gathered and increased in number. _____ time they developed into populous towns _____ cities and rose into great empires..

_____, while Europe was still grouping in _____ stone age, Asia was already making _____ contributions to the art of writing, _____literature and the arts, to science _____ government and to religion. In Asia _____ its closely associated northern shore of _____ until the sixteenth century, were found _____ al of the advanced

Civilizations of _____ . the only exceptions of importance were _____ ancient civilizations of the Aztecs of _____, the Mayas of Central Asia and _____ Incas of Peru which were discovered _____ the European very much later.

Asia, _____, is the home of the world's _____ religions – Buddhism, Christianity and Mohamedanism – as _____ as of Persia, Brahmanism (Hinduism) in India, Confucianism and Taoism in China and Shintoism in Japan.

APPENDIX H

Schedule of Activities

Activity	June 1999	July 1999	Aug. 1999	Sept. 1999	Oct.. 1999	Nov. 1999	Dec. 1999	Jan. 2000	Feb. 2000	March 2000
1,.Proposal Defense	x									
2. Revising the proposal	x	x								
3. Preparing the instruments	x	x								
4. Data Gathering		x	x	x						
5. Checking of test papers					x					
6. Tabulating of results					x					
7. Statistics /finalization of Chapter 1,2&3					x	x				
8. Writing of Chapters 4&5						x	x	x		
9. Final Defense									x	
10. Revision of Final Draft									x	x
11.Production of Final Copies										x

APPENDIX I

Letter to the Deans

College of Arts of Sciences
Western Mindanao State University
Zamboanga City

June 24, 1999

_____

_____

_____

Dear _____,
As a requirement of my Ph.D. in Language Teaching course, I am at present conducting
of study entitled "hemispheric Dominance and English Proficiency Levels in the Macro
Skills of WMSU College Students". Students, From first to fourth year, of the three
colleges, namely: College of Arts and Sciences, College of Engineering and College of
Education comprise the population of the study.

In this connection. I would like to ask permission to undertake the following acrtivities to
start June 28, 1999:

1. Pilot-testing of instrument in a class from any of the concerned colleges
2. Selection of 20 students from each year level (totaling to 80 from each
    college) and briefing of said chosen students/respondents
3. Administration of the following research instruments to selected students.
    a. Hemispheric Dominance Test
    b. English Proficiency Test
        1.) Listening Skill Test   4.)Writing Skill Test
        2.) Reading Comprehension Test   5.) Cloze Test
        3.) Speaking Skill Test

I would like to request further that 1.) class room teacher be around during the selection
of 20 students from each year level, and 2.) the students who will have been selected
accordingly be excused from their classes during the administration of the test cited
above.

Thank you very much in anticipation for your kind consideration and assistance on this regard.

Very respectfully yours,

<u>Sgd. Julieta B. Tendero</u>
          Researcher

                              Approved: <u>Sgd. Dr. Agnes D. Duque</u>
                                          Dean, CAS Graduate School

APPENDIX J

Letter to the Respondents

College of Arts and Science

This University

Baliwasan, Zambopanga City

July 1999

Dear Respondents:

Presently , I am conducting a study entitled *Hemispheric Dominance and English Proficiency in the Four Macro Skills of the Western Mindanao State University College students.* This is a part of the requirements of my course, Doctor of Philosophy in Language Teaching (English).

In this connection, with the permission of your dean and concerned professors, I would like to request you to answer as honestly as possible the six test instruments for the said study.

Rest be assured that the test results will kept strictly confidential.

Thank you in anticipation for your much needed cooperation in this project.

Truly yours,

Sgd. (Mrs.)Julieta B. Tendero
             Researcher

APPENDIX K

Curriculum Vitae

Personal Data:

Name Julieta Balbin Tendero   Academic Rank: Assistant Professor I

Date of Birth: May 18, 1960   Place of Birth: Mabuhay, Zamboanga del Sur

Civil Status: Married   Husband: SPO1 Danilo Enero Tendero

Children: Danivie ,James Lloyd   Address: Don Enriquez Drive Tetuan
        and Dexter   Zamboanga City

Educational Background:

Educational Level	School and Address	Inclusive Year	Honors/Award Received
Elementary	Mabuhay Central School Mabuhay, Zamboanga Sibugay	1967-73	Salutatorian
Secondary	Xavier High School Mabuhay, Zamboanga Sibugay	1974-78	Valedictorian
Tertiary	Ateneo de Zamboanga Universit y La Purisima St, Zamboanga City	1978-83	Cum Laude
Graduate	Ateneo de Zamboanga University La Purisima St, Zamboanga City	1985-89	_____

Thesis: "Deterrent Factors to the Pursuit of Higher Education of Graduates of
        Xavier High School, 1983-87, As Determinants of the Adoption of
        Alternatives to Traditional Post-secondary School Program"

| Postgraduate | Western Mindanao State University Baliwasan, Zamboanga City | 1996-2000 | _____ |

Degrees Earned:

Bachelor of Science in Education, Major in English, Ateneo de Zamboanga University
La Purisima St, Zamboanga City, March 1983

Master of Arts in Education, Major in Educational Administration,
Ateneo de Zamboanga University, La Purisima St, Zamboanga City, March 1989

Diplomate Degree Earned:

Diploma in Education, Major in English Language Teaching (ELT), Western Mindanao
State University, Baliwasan, Zamboanga City, March 1999

Work Experiences:

English teacher, Xavier High School, Mabuhay, Zamboanga Sibugay, 1983-1987
English professor, College of Arts and Sciences, Ateneo de Zamboanga University
        La Purisima St, Zamboanga City, 1988-1993
English professor, College of Liberal Arts, Western Mindanao State University,
        Baliwasan, Zamboanga City, 1993 - to date

Seminars attended: (From 1990 to 1999)

Seminar Title/Theme	Inclusive Date	Venue/Sponsor
Region IX Faculty Development Seminar	July 19-20, 1990	AdeZ/CETA
Seminar on Teaching English AS a Foreign Language	Oct 4, 1990	Adez/ASAP
Seminar on Teaching English for Specific Purpose and Technical Writing	Oct . 5, 1990	Adez/ASAP
Foundations in Education Institute	May 7-18, 1990	AdeZ/AdeZ
Seminar on Teaching Strategies & Clasroom Management	June 30,1990	/Adez AdeZ/Faculty Club
LEDCO Conference	Nov. 7, 1992	AdeZ/LEDCO
Seminar-Workshop on Updating Fil./Eng. Language Teaching Strategies	Nov. 7, 1992	AdeZ/LSP & DECS

Three-Day Seminar Workshop with the Theme:"Towards Improved Faculty Competency & Faculty Welfare"	Jan. 11-13, 1994	/WMSU WMSU/Faculty Club
Lecture Demonstration Using Eclectic Approach	March 4, 1994	WMSU/CAS
"An Analysis of Forrest Gump"	July 26, 1995	AdeZU/ASRC
Annual Convention of the Linguistic Society of the Philippines	April 25-26, 1997	La Salle/LSP
3RD Regional PAFTE Convention-Workshop	May 23-24, 1997	WMSU/PAFTE
Seminar Workshop with the Theme: "Reculturing Teacher Education Through Innovative Teaching Strategies"	Sept. 12, 1997	WMSU/CAS
Lecture Discussion on "How to Enhance Your Creativity" & "The Art of Fiction"	Sept.16, 1997	AdZU/ASRC
Seminar Workshop on Applied Social Research and Computer-Based Data Analysis	Oct. 15-17, 1997	AdeZU/RDPO
Seminar Workshop on "Moral Recovery Program-Internal Circle"	Dec.14, 1997	WMSU/MRP
"Managing Self For Others"	Dec. 9-11, 1998	WMSU/CCE
The Philippine Association for Language Teaching, Inc. Seminar	April 30, 1999	WMSU/PALT
PAFTE Regional Convention-Workshop	May 22-23, 1999	WMSU/PAFTE
Philippine Literature: A Deeper Understanding and Appreciation	Sept. 23, 1999	WMSU/CAS

Civil Service Eligibilities:

Career Service Sub professional Examination, December 27, 1981, 91.29%ile
Professional Board Examination for Teachers, November 27, 1983, 74.70%ile
Civil Service Eligibility under P.D. No.907, March 27,1983