Results of "Suneung" and Errors on Writing

Eun-Pyo Lee (Eulji University, School of Medicine)

Lee, Eun-Pyo (2002). Results of "suneung" and errors on writing. English Language & Literature Teaching, 8(2), 55-69.

The study was done to find out if there's any correlation between the results of the state-run college entrance examination called "suneung," or college scholastic ability test (CSAT) and the frequency of errors of the medical and nursing students. These two groups of students were subjects for the research. The study was based on the writing of fresh year students who were required to take four-credit-hour English course. These students' writing, particularly their self introduction, was analyzed to see if medical students (the high-scored) made fewer errors on the writing and nursing students (the medium-scored) made more critical errors or vice versa, and furthermore, if the results of the scores had any correlation on the critical errors in writing. The concern of the study was also to explain the attributable factors of the outcome if the high-scored of CSAT actually made fewer errors as well as the types of critical errors made and ways to minimize them.

I. INTRODUCTION

Learners of English, even of advanced level, are expected to make various errors. Therefore, it is essential for teachers of English to be fully aware of the types and frequencies of such errors to better help them minimize errors, especially critical ones which deter comprehensible communication. Understanding errors further helps teachers better teach learners to obtain accurate proficiency of the language. Also understanding of effective ways of language learning can be helpful for teachers to better teach with efficient approaches. There are a number of research studies done on the topic of error analysis. Most of these research studies show

results on the types and frequencies of errors made by their subjects. However in the current study, the results of CSAT are to be analyzed along with the types and frequencies of errors, to see if the high-scored in CSAT made fewer errors and if the medium-scored made more critical errors.

If learners who excel in academic performance actually do speak and write better English with fewer errors, then what has to be done or implemented for learners of English who do not belong to such an excellent group? This may be one of the difficult questions for any teachers of English, if not teachers of all subjects. However, it is important to first learn what errors these learners of English make in order to come up with solutions to the problem.

The study was done to see 1) if there's correlation between CSAT results and the number of errors, 2) if learners' confidence has to do with better performance in writing and speaking, 3) if the learners' attitudes toward English class were correlated with their CSAT results, 4) what differences lie between the high-scored in CSAT and the medium-scored, 5) what teachers should focus for these different groups of learners, and 6) what critical errors are made.

II. REVIEW OF THE LITERATURE

An error refers to a systematic error of competence, both covert (grammatically correct but not interpretable within the context of communication) and overt (obviously ungrammatical utterances) that deviates from the norms of the target language (Brown, 1994; Corder, 1967; Ellis, 1996).

According to Richards (1971), Error Analysis (EA) would allow teachers to figure out what areas should be focused on and what kind of attention is needed in an L2 classroom. So the language teachers can be better able to develop curriculum and select materials that can facilitate L2 learning processes (Richards, 1995; Schachter & Celce-Murcia, 1977).

A number of studies have been done on Error Analysis based on learners' written work. One of the leading studies in this area was done many decades ago by Duskova (1969) who identified a total of 1007 errors based on the writings of 50 Czech learners of English and analyzed them in terms of 9 categories. Her study showed that errors in articles (260) were most frequent, followed by errors in lexis (233) while there were 54 errors in syntax and only 31 in word order. Kim (1987)

identified a total of 2455 errors in the English compositions of 12th grade Korean EFL learners. The results showed that errors in BE and auxiliaries were most common (419), followed by errors in prepositions (287) and that intralingual errors arose more than transfer errors. In the following year, Kim (1988) investigated errors in English verbs with reference to tense, mood, and voice. The 120 subjects were the 11th grade Korean EFL learners who were asked to translate 42 Korean sentences into English. Results revealed that errors in mood were most frequent (903), followed by errors in voice (885) and tense (720), among the total of 2508 errors.

Kim (1989) conducted EA with 200 10th grade Korean EFL learners, using their English translations of 30 Korean sentences. She identified 1122 errors in which transfer errors resulting from L1 structures were higher (24%) than overgeneralization errors (23%). In the essay writings of 200 10th grade Korean EFL learners, Kim (1998) identified 2122 errors and classified them in terms of 6 domains and subdivided them into 22 linguistic categories. Her findings revealed that errors in articles were most common (354) and that there were only 8 errors in word order and 2 in voice.

There are also some more studies done on spoken errors by Lennon (1991), Kim (1997), and Chin (2001) to name a few.

However in the study of error analysis, learners who avoid the exact structures they find difficult due to the differences between their native language and the target language may be viewed to have no difficulty with them as Brown (1994) and Ellis (1996) pointed out. Therefore, EA research has limitations of providing only a partial picture of learner language and having a substantive nature that it does not take account avoidance strategy in L2 acquisition because EA only investigates what learners do.

In learning a foreign language, there are numerous factors involved especially the so-called learner-related variables (Skehan, 1991; Larsen-Freeman & Long, 1991), including age, gender, motivation, attitudes, learning strategies, learning styles, and educational background. Ellis (1994) explains this variation of second language acquisition to be resulted from individual learner differences in factors such as age, aptitude, motivation, anxiety, beliefs, and personality. According to a great many researchers, the important factors that have impact on L2 acquisition or foreign language learning are intelligence, aptitude, behavior, motivation, and learning strategies.

Among these studies on second language acquisition, motivation has been the topic of numerous researchers as it was considered crucial variation of second language acquisition. Gardner and Lambert (1959; Gardner, 1960, cited in Gardner & Lambert, 1972) investigated English-speaking high school students learning French in Montreal. In these studies, students with integrative motivation were more successful language learners than those with instrumental motivation, as evidenced by a high correlation between integrative motivation and oral proficiency. Gardner and Smythe (1973), in their comparison of a group of "stay-in" students with a group of "drop-out" students, found that there were more students with integrative motivation in the stay-in groups than in the drop-out groups.

Recent research on achievement motivation has proposed several sets of contrasting goal orientations to account for differences in students' achievement behavior: task versus ego goals (Maehr, 1983; Maehr & Nicholls, 1980; Nicholls, 1984), learning versus performance goals (Dweck, 1986; Elliott & Dweck, 1988), and mastery versus performance goals (Ames & Archer, 1988). Because of the convergent relations among task, learning, and mastery goals, these perspectives have been integrated and classified as mastery goals (Ames & Archer, 1988). Similarly, ego and performance goals have been identified as performance goals.

With a mastery goal, learners are oriented toward developing new skills, enhancing their level of competence, or achieving a sense of mastery based on self-referenced standards (Ames, 1992; Brophy, 1983; Meece, Blumenfield, & Hoyle, 1988). Moreover, learners' sense of efficacy with this mastery goal is grounded on the belief that effort will result in success (Ames, 1992; Ames & Archer, 1988). Central to a mastery goal is a focus on the intrinsic value of learning (Meece & Holt, 1993) as well as on effort as the path to achievement. In contrast to mastery goals, performance goals indicate that the task choice and pursuit process are built on learners' concerns about their ability level (Dweck, 1986). Ability is indicated by performing better than others, by surpassing norm-based standards, or achieving success with minimal effort (Ames, 1992).

In order to produce communicative output in language, comprehension precedes production in language learning. There can be no production unless linguistic input is provided and becomes comprehensible intake for a comprehender. Comprehension is important not only because it precedes production logically and chronologically, but primarily because it appears to be the basic mechanism through which the rules of language are internalized (Winitz, 1981, p. 130).

III. RESEARCH METHODOLOGY

The purpose of the study is to see if there is correlation between the scores of CSAT and the frequency of errors students made, if learners' confidence produces better speaking and writing English, if their favorable attitudes toward English correlate with the results of their scores of CSAT. It is also to see if the medium-scored actually make more critical errors than the high-scored or vice versa, and if there are any noticeable differences between the two groups in terms of error analysis. Types of critical errors made and ways to minimize them will also be discussed.

1. Subjects

The two groups of students, group A of medical, and B of nursing students at Eulji University, School of Medicine were subjects of the study. Their official CSAT scores for both English and the total of five parts (Korean language, English, math, science, and social studies) were obtained from the admissions office for the research. Both groups of students were required to take English I, taught by the researcher with the same textbook. The oral interview was given to see if their confidence and favorable attitudes influenced their fluency. The study was based on the written self introduction of the two groups. On the day of the oral interview, students were given two hours to write an introduction of themselves in English while one-to-one interview was conducted. Their composition on the self introduction was collected and analyzed in terms of errors made.

There were 47 and 42 students in group A and B respectively. However, seven medical students were not required to take the CSAT because they were accepted by the special admissions procedure upon completion of university education at other institution or completion of high school in foreign country. Therefore, these seven students were excluded from the study. One student decided to take a year off and six were repeaters from the previous year because of a failing grade in either chemistry or physics. According to the policies of medical schools, students repeat a year if they get an F in any 3-credit-unit course. The average points of these repeaters' CSAT were 390.5 out of 400, approximately 22 points higher than that of this year's freshmen (368.7) because the CSAT for the year 2002 was extraordinarily difficult compared with the previous years. Therefore, the discrepancy between the two different year students was another reason for the six

students to be excluded from the study. In the nursing group, however, only two repeaters were excluded.

A total of seventy three fresh year students, 33 medical (group A), and 40 nursing (group B), were participants of the study during the spring semester of 2002. The number of male-female ratio in group A was 16:17, 52% female while it was 36:4, 90% of the students were female in B.

TABLE 1
The Range of CSAT Scores

CSAT Range	No. of Students(A)	No. of Students(B)
370 - 379	11	0
360 - 369	21	0
350 - 359	1	0
340 - 349	0	1
330 - 339	0	4
320 - 329	0	20
310 - 319	0	15
Total	33	40

TABLE 2
The Range of English Scores in CSAT

English Range	No. of Students(A)	No. of Students(B)
70 - 79	30	4
60 - 69	3	32
50 - 59	0	4
Total	33	40

Procedures

Both groups were asked to write a self introduction toward the end of the spring semester 2002. Oral interview was individually given with questions on the topic of wedding and marriage which was covered during the class hours. They were asked to complete a questionnaire written in Korean for the reference to see if their attitude and confidence in English played a role in their CSAT scores and better spoken and written English. The questionnaire was collected and studied on their

response with the results of their verbal and written tests. It had some irrelevant questions for the current study for they were intended for other purposes.

Their written introduction and oral responses were studied to see the relationship between the CSAT scores and the frequencies and types of errors, if learners' confidence in English produced better speaking and writing competence, if their attitudes toward English had any impact on the CSAT results especially on English section of the test, what critical errors they made and how these errors could be minimized.

All 73 students' introduction papers were reviewed and the sentences with errors were then recorded on a master sheet. The number of errors were classified into 12 different categories; subject-verb agreement, wrong-tensed verb, wrong word, preposition errors, article errors, transfer errors, plural errors, omission of *be*, omission of *to*, adding *be* to verb, and run-on sentence. And a few errors that did not belong to any of the above categories were put into miscellaneous: for example, using *so* instead of *such*, *more deep* for *deeper*, and using adjective for adverb.

N. RESULTS

The average scores of the CSAT for group A and B were 368.7 and 322.2 respectively, showing the difference of 46.5. The highest score was 376 in group A whereas 342 in B. The lowest of group A and B were 359 and 310 respectively. The ranges of group A were from 376 to 359, 17 points apart whereas for B, 32-point difference showed from 342 to 310. The average English scores were 72.2 and 64.9 for A and B respectively. Group A's ranges were 75 to 68, 7 points apart whereas 74 to 57 for B showed a wider range of 17. The maximum possible score in English was 80.

The average sentences group A wrote were 28 whereas 21 for B. The longest writing for A was 57 and the shortest was 13. For group B, the longest was 38 and the shortest was 10. The two groups were compared to see if students with higher CSAT wrote longer with fewer errors.

The average errors each student made in group A were 11.1, whereas those of the B were 16.3. The most frequently occurred error was tense for both groups. Then followed article and preposition errors. The following table shows the most common errors of the two groups:

TABLE 3
The Frequency of the Most Common Errors

Types of Errors	No. in group A	No. in group E
Tense	95	116
Article	88	92
Preposition	52	72
Wrong Word	53	47
Transfer	21	78
Plural	36	45

The noticeable difference in the frequencies of the most common errors shown above was the number of transfer errors. About three and half times more transfer errors were made by group B than A. Additionally, omission of be as well as omission of subject in sentences and to were also noteworthy in B. Twenty percent in group B omitted subject in their sentences. Sixty percent of them omitted to before a verb: for example, "I like talk with friends," whereas twenty five in A omitted to. Fifty percent omitted be whereas twenty two percent in A did. This group made more errors in omitting verbs or adding be to verbs as in "I can't computer very well," or "I am do nothing." Errors in word order were another troublesome errors for group B. In other words, group B made more critical errors that were difficult to comprehend the meaning of their spoken and written sentences. The followings show more errors and examples of critical errors which make their meaning unclearly conveyed:

TABLE 4
More Errors

Types of Errors	No. in group A	No. in group B
Omission of to	13	34
Omission of be	8	36
Omission of verb	1	13
Addition of be to verb	7	21
Word order	9	20
Omission of subject	0	9

TABLE 5
Examples of Critical Errors

Erred Sentences	Corrected Sentences
*Our classmates gathered various place>	
*I think inside of bright is exact timidity>	Even though I appear to be lively and active, I am actually timid.
*I sometimes mental agony about friend	> I sometimes agonize over the relationship with my friends.
*I decide various thing by myself and I go decisio	to coming the adult> I make various on my own and I am becoming an adult.
*Rock fly away bad feeling inside me> F	tock music makes me shake off bad feelings inside.
*I don't want to my university life miss to a	only enjoying> I don't want to miss my classes only to enjoy myself.

The above sentences contain not only grammatical errors but also transfer errors as some are in forms of direct translation from Korean way of expression. In some cases, basic structures of sentence formation do not seem to be internalized to produce grammatical writing. They seem to be plainly juxtaposed of words without even consideration of grammatical rules. Comprehension of such syntactic rules and grammar should precede production in language learning. Through the above examples, it obviously shows how important it is to have linguistic input before producing communicative language.

The oral interview was given to both groups on the same topic, "wedding and marriage" to assess their listening comprehension and responding ability. The results of the questionnaire were compared with the scores of CSAT and English. It turned out that their confidence did not have impact on the results of the errors. On the other hand, the high-scored made less errors. The next table shows the students' response on confidence and attitude toward English. Interestingly, their response was identical on both categories.

TABLE 6
Students' confidence and attitude

Responses	No. of Students(A)	No. of Students(B)
Very Confident	9	9
Somewhat Confident	8	8
Far From Confident	16	17
No Answer or Not Sure	0	6

Students in group A seemed more active in their verbal responses toward the interview questions with longer responses. Their attitude of risk-taking was greater than group B. This had to do, in part, with the number of male students in group A. Male students accounted for 48% (16) in group A whereas only 10% (4) in group B. Female students in group B seemed to be more bashful than their counterparts and they were apparently uncomfortable answering or expressing themselves in English.

The fearlessness about making mistakes may have been stemmed from either personality or a strong awareness of the necessity of risk-taking, or from both combined, which was usually the case with highly active oral participants shared the recognition that making mistakes was a necessary process in any language learning and felt that they did not have to be ashamed of making mistakes, particularly because they were in a foreign language speaking class.

O'Malley et al. (1989) found that effective students tended to relate new information to prior knowledge. In other words, the students frequently related the new information to their personal experiences and made critical judgements about the value of incoming information. In contrast, the ineffective learners not only had fewer elaborations (relating new information to information that has been stored in memory), but also did not make connections between the new information and their own lives.

Like such studies previously done on risk-taking, medical students with high scores in the CSAT could utilize the prior knowledge to their writing as well as speaking and made less grammatical errors. It was also proved that their active attitude resulted in more risk-taking to produce active responses to the question. Their motivation to do well in medical school made them excel in their studies and language learning. However, the gender difference did not make much difference on the number of errors on the writing.

V. CONCLUSION & IMPLICATIONS

There are certain errors that are difficult to avoid due to intralingual differences and transfer errors. However, the students with high CSAT scores made less errors especially in terms of critical errors that trigger misunderstanding and incomprehension. The errors in tense, article, preposition, wrong word, transfer and

plural were commonly occurred in both groups. On the other hand, omission of subject was a unique phenomenon in group B. That was, about 20% of the students in B omitted subject in a sentence or clause whereas nobody in group A made such errors. Other errors of subject-verb agreement, word order, omission of *to*, adding *be* to verbs, omission of *be* occurred more frequently in group B. There were some other miscellaneous errors than listed above in this group though such occurrences were minor.

The results showed that group A made less errors in general. Group B made twice as many errors in subject-verb agreement, four times as many in *be* verb, twice as many in word order, three times more preposition *to* errors, and three and half times more transfer errors than group A. They also made more critical errors that caused their writing hindered from conveying their intended message. Commonly occurred errors for both groups listed in Table 3 have similarities with numerous studies in the past.

The majority of the students in group A seemed to have the potential knowledge to express themselves in English. However, students in group B had a tough time composing their thoughts and expressing themselves in English. Their writing revealed translated version of what they would express in their native language in the same word order, creating incomprehension caused by transfer errors and ungrammatical structures.

Since there are differences in the types and frequencies of these subjects, teachers of different levels of English learners should understand what are specifically needed for each group, or level of the students. The group B, namely, the medium-scored made similar errors entry level learners would make. Therefore, these learners should be given enough drills to fully understand grammar based sentential structure. Without the grasp of such understanding, awkward composition of words is bound to come up leading to a great deal of misunderstanding.

For group A, a technique such as peer group error correction can be effective because they were able to detect some of the grammatical errors when given time to correct their writing. There was a tendency that students would not proofread their writing even though they were given enough time to do so which was also verified in Kim's (2001) study. It was strongly recommended that they be trained to proofread or edit their writing before they handed in their writing. For group A, it was especially needed to explain the different usage of synonyms and colloquial expressions of certain situation. However for group B, grammatical order of

sentence structures and syntactic rules were needed to be emphasized and internalized. Since this group seemed to be at a loss when asked to correct their own writing in class, peer group error correction might not be effective.

Therefore, in order to minimize errors, teachers of entry level learners need to first explain the grammatical structures and syntactic rules, then let them practice enough drills before they produce comprehensible piece of writing. Since subject-verb agreement, using *be* verb, and word order are troublesome areas, providing drill patterns of such practice may be prerequisite to the entry-level learners.

REFERENCES

- Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology*, 84, 261–271.
- Ames, C. & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology*, 80, 260-267.
- Brophy, J. (1983). Conceptualizing student motivation. Educational Psychologist, 18, 200–215.
- Brown, H. D. (1994). *Principles of language learning and teaching* (3rd ed.). Englewood Cliffs, NJ: Prentice Hall.
- Chin, C. (2001). Error Analysis: An Investigation of Spoken Errors of Korean EFL Learners.
- Duskova, L. (1969). On sources of errors in foreign language learning. *International Review of Applied Linguistics*, 7, 11–36.
- Dweck, C. s. (1986). Motivational processes affecting learning. *American Psychologist*, 41, 1040–1048.
- Elliot, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, *54*, 5–12.
- Ellis, R. (1994). The study of second language acquisition. Hong Kong: Oxford University Press.
- Ellis, R. (1996). The study of second language acquisition. Oxford: Oxford University Press.
- Gardner, R. C. (1960). Motivational variables in second-language acquisition. In R. C. Gardner & W. E. Lambert (Eds.), Attitudes and motivation in second

- language learning (pp. 199-216). Rowley, MA: Newbury House.
- Gardner, R. C. & Lambert, W. E. (1959). In R. C. Gardner & W. E. Lambert (Eds.), Attitudes and Motivation in Second Language Learning (pp. 191-197). Rowley, MA: Newbury House.
- Gardner, R. C. & Lambert, W. E. (1972). Attitudes and motivation in second language learning. Rowley, MA: Newbury House.
- Gardner, R. C., & Smythe, P. C. (1973). Motivation and second language acquisition. Canadian Modern Language Review, 31, 218-230.
- Kim, H. (1987). An analysis of learners' errors made in their English composition especially in the high school level. Unpublished master's thesis. Chungbuk National University, Chungju, Korea.
- Kim, I (1988). A study of the errors in the use of the English verbs with special reference to tense, mood, and voice. Unpublished master's thesis. Busan National University, Busan, Korea.
- Kim, M. (2001). The Use of Written Dialogue Entries in a College EFL Composition Classroom. *English Teaching*, *56*(4), 31–53.
- Kim, S. H. (2001). A Description of College Students' Writing Process: A Strategy-based Approach. English Teaching. 56(4), 55-73.
- Kim, Y. (1997). A study of errors and intelligibility of Korean college students' utterances. Unpublished master's thesis. Kangwon National University, Chuncheon, Korea.
- Larsen-Freeman, D., & Long, M. (1991). An introduction to second language acquisition research London: Longman.
- Lennon, P. (1991). Error: Some problems of definition, identification, and distinction. *Applied Linguistics*, 12(2), 180–196.
- Maehr, M. L. (1983). On doing well in science: Why Johnny no longer excels, why Sarah never did. In S. G. Paris, G. M. Olson, & H. W. Stevenson (Eds.), Learning and motivation in the classroom (pp. 179-210. Hillsdale, NJ: Erlbaum.
- Maehr, M. L., & Nicholls, J. G. (1980). Culture and achievement motivation: A second look. In N. Warren (Ed.), Studies in crosscultural psychology (pp. 221-267). San Diego, CA: Academic Press.
- Meece, J. L., Blumenfield, P. C., & Hoyle, R. H. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of Educational Psychology*, 80, 514-523.

- Meece, J. L., & Holt, K. (1993). A pattern analysis of students' achievement goals. *Journal of Educational Psychology*, 85, 582-590.
- O'Malley, J.M. Chamot, A. U., & Kupper, L. (1989). Listening comprehension strategies in second language acquisition, *Applied Linguistics*, 10(4), 419–437.
- Skehan, P. (1991). Individual differences in second language learning. Studies in second Language Acquisition, 13, 275-298.
- Winitz, H. (1981). A reconsideration of comprehension and production in language training. In H. Winitz (Ed.). The comprehension approach to foreign language instruction (pp. 15-28). Rowley, MA: Newbury House.

Appendix

설문조사서

=대학에 입학하기 전에=

영어가 자신 있는 과목이었나?

- a. 매우 그렇다 b. 약간 그렇다 c. 보통이다 d. 별로 아니다 e. 매우 아니다 영어가 좋은 과목이었나?
- a. 매우 그렇다 b. 약간 그렇다 c. 보통이다 d. 별로 싫었다 e. 매우 싫었다 싫은 경우 이유는?
- 영어 과외를 했나?
 - a. 그렇다 b. 아니다
- 과외를 한 경우는 어디서?
 - a 외국인에게 그룹으로 b. 외국인에게 혼자 c. 내국인에게 그룹으로
 - d. 내국인에게 혼자 e. 학원에서
- 어느 부분을 주로 공부했나?
- a. 문법 b. 회화 c. 토익이나 토플 등 d. 독해 e. 교과서 공부
- 학교영어시간 외에 본인이 하루에 영어공부한 시간은?
 - a. 1시간 이내 b. 1-2시간 c. 2-3시간 d. 3시간 이상
- 학교영어시간에 배운 내용이 수능 (CSAT)에 도움이 되었는가?
- a. 매우 그렇다 b. 약간 그렇다 c. 보통이다 d. 도움이 안 되었다고등학교 때 토익시험을 본 적이 있는가?
 - a. 그렇다 b. 아니다

=대학에 입학한 후=

영어가 자신 있는 과목인가?

a. 매우 그렇다 b. 약간 그렇다 c. 보통이다 d. 별로 아니다 e. 매우 아니다 영어가 좋은 과목인가?

a. 매우 그렇다 b. 약간 그렇다 c. 보통이다 d. 별로 싫다 e. 매우 싫다 토익 강의 시작 후 하루에 영어 공부하는 시간은?

a. 1시간 이내 b. 1-2시간 c. 2-3시간 d. 3시간 이상 수업시간에 다루는 내용을 잘 이해하는가?

a. 매우 그렇다 b. 약간 그렇다 c. 보통이다 d. 전혀 아니다 토익에서 가장 힘든 부분은?

a. 듣기 b. 어휘 c. 문법 d. 독해 듣기가 힘든다면 이유는 무엇인가? 문법이 힘든다면 이유는 무엇인가?

Lee, Eun-Pyo 을지의과대학교 의예과 301-782 대전광역시 중구 용두2동 143-5 Tel: (042) 259-1704 / C. P.: 016-412-6749

Fax: (042) 259-1713

E-mail: elee@emc.eulii.ac.kr

Received in October, 2002 Reviewed in November, 2002 Revised version received in December, 2002