영어어문교육 14권 1호 2008년 봄

A Study of the Epistemic Modality in College Writing

Eunpyo Lee*
(Eulji University)
Seungwon Park**
(Hannam University)

Lee, Eunpyo & Park Seungwon. (2008). A study of the epistemic modality in college writing. *English Language & Literature Teaching, 14*(1), 45-58.

This study explores the types and quantity of the epistemic modal verbs, sentence adverbials, and epistemic expressions in the college students' writing. For the study, 52 sophomore medical students in English Reading & Writing class were given the process essay writing assignment, and their essays were collected and reviewed in terms of the number of sentences, words, epistemic modal verbs, sentence adverbials, and epistemic expressions. The results show that approximately one-third of the students use strong epistemic modal verbs such as *must, have to,* or *should* when stating proposition and/or suggestion. It is advised that L2 learners be more exposed to the usage of epistemic modality as the quality of academic writing may depend on the adequate use of the epistemic modality. This study further examines if there is any gender difference in quantitative process essay writing and/or in terms of the epistemic expressions.

[epistemic modality/modal verbs/ quantitative process writing]

I. INTRODUCTION

English reading has been the primary skill to be acquired by medical students in the past decades as the learners were required to study the medical textbooks written in English. However, in recent years, as the demand for medical professionals to publish the SCI (Science Citation Index) research papers in English grew extensively out in the medical field, the interest in obtaining the English skills seemed to have been shifted to writing. Writing is ever more important and an unavoidable concern for not only medical professionals but also many scholars and researchers in other areas of academia, business,

* first author ** corresponding author

science, and technology.

Among the four skills of English, writing is the most difficult area for Korean learners to acquire as Krashen (1984), Makalela (2004), and Nunan (1989) asserted. A large number of medical professionals have been asking me, the head researcher of this study, to proofread or edit their medical papers, lamenting that writing a research paper in English is extremely difficult. Voices of such frustration lead universities to offer more writing courses in recent years. And to meet the demand of the learners, universities require L2 learners to develop their writing skills for the various needs. Accordingly, developing learners' writing skills in L2 has been of concern in university education as Belcher & Braine (1995) and Jordan (1997) pointed out.

Numerous studies have been done to find effective ways of improving L2 writing skills ranging from error correction, teacher feedback, process and journal writing, to instructional methods. However, no single instruction is effective but rather a combination of methods and instructions are to be taken into consideration. Since the quality of writing is such an important concern for the medical professionals and many others, the current study is geared to focus on the so-called sophisticated aspect of starting a proposition or suggestion with the epistemic modality.

Epistemic modality is concerned with how writers or speakers convey their evaluation of possibilities and the degree of confidence in what they write or say (Coates, 1983). Making statements with the precise degree of certainty or doubt that one intends is very important for any effective writing. Having a variety of epistemic devices of the target language at one's disposal, however, is generally considered to be difficult for language learners because languages possess a great many different ways of realizing epistemic modality. An appropriate degree of confidence in a given context may differ across languages. Some studies revealed the difficulties that second/foreign language learners of English face in this particular area (Allison, 1995; Hu, Brown & Brown, 1982; Hyland & Milton, 1997; McEnery & Kifle, 2002).

The primary purpose of the study is to learn the types of epistemic modal verbs, sentence adverbials, and epistemic expressions used by the second year medical students in English Reading & Writing class for their assignment of a five-paragraph how-to process essay writing on "How to mend a broken heart." It is to see the quality and quantity of the epistemic modality of the students when giving experiential suggestion or proposition which can be considered important as part of abstract and academic (or medical) paper writing. However, grammatical and mechanical errors and accuracy of the writing were not to be a concern for the present study.

II. LITERATURE REVIEW

1. Modality

Modality verbs are typically divided into two types: epistemic modality and root modality (Halliday, 1994; Holmes, 1988; Hoye, 1997; Hyland, 1994, 2000; Leech & Svartvik, 1983; Lyons, 1977; Quirk, Greenbaum, Leech & Svartvik, 1985). Epistemic modality is concerned "with the speaker's (writer's) assumptions or assessment of possibilities" and "indicates confidence (or lack of confidence) in the truth of the proposition expressed" (Coates, 1983, p. 18). By saying that *"John must be in New York by now,"* for example, the speaker or writer is conveying his/her confidence in the proposition that *John is currently in New York* while the replacement of the modal verb *must* with *may* reduces such confidence significantly. On the other hand, root modality has to do with interactional meanings instead of logical possibilities (Celce-Murcia & Larsen-Freeman, 1999). Examples include the meaning of obligation expressed by the modal verb *must* in the sentence *"You must go out of this room now"* or permission signaled by the modal verb *may* in *"You may leave the room."* Modal expressions are rather complex for second/foreign language learners because they can convey a range of different meanings (Hyland & Milton, 1997). For example, *could* can express ability, permission, and possibility depending on the context of its use.

2. Epistemic Modality

Traditionally, epistemic modality has tended to be discussed only in terms of modal verbs such as *must, may, might, should,* etc. (Coates, 1983; Hermeren, 1978; Palmer, 1979). However, other grammatical classes are also regularly used to express epistemic meanings (Holmes, 1982, 1983, 1988; Hyland & Milton, 1997; McEnery & Kifle, 2002), for example, lexical verbs (e.g., *believe, know, think*), adverbs (e.g., *definitely, indeed, probably*), nouns (e.g., *belief, doubt, possibility*), and adjectives (e.g., *certain, clear, probable*). According to Holmes' (1988, p. 27) study, there are as many as 350 lexical devices in English that can be employed for epistemic function. And since epistemic modality is importantly considered in expressing certain degrees of certainty or doubt, there are increasing number of studies done on the topic including the one done by Gabrielatos & McEnery (2005) to compare the use of the epistemic modality by NS and advanced non-native speakers (NNS) of English in the corpus. It is said that epistemic modality is thus difficult for second/foreign language learners to acquire.

Hyland and Milton (1997) have suggested the following five categories of epistemic commitment, which divide up the epistemic continuum (see Table 1):

TABLE 1

Five Categories of Epistemic Commitment

Certainty	Probability	Possibility	Usuality	Approximation
certainly	would	may	always	about
must	seem	might	often	approximately
will	probable	perhaps	usually	almost
argue	believe	possible		

While some researchers state that this categorization is somewhat arbitrary and classifying each individual example into these categories is to some extent subjective, several other researchers have used the same or similar semantic categories and found them useful (Halliday, 1994; Holmes, 1983, 1988; McEnery & Kifle, 2002). It seems conducive for second/foreign language writers to learn and be aware of these categories of epistemic modality.

According to Hyland & Milton (1997), beyond simply signaling the degree of their certainty or doubt, writers' use of epistemic devices further has an affective dimension in the sense that it helps to build a relationship with the reader.

It is to learn the types of most frequently used epistemic modal verbs, sentence adverbials, and epistemic expressions in order to focus on the effective ways to enhance writing skills using epistemic modality. What needs to be implemented for the learners of English to improve ways of giving proposition, suggestion and/or conclusion will be considered.

3. Hedging

Some scholars like Crompton (1997), Hyland (1994), Hyland & Milton (1997), Lakoff (1972), and Myers (1989), to name a few, explain the notion of hedging in their research studies as a suitable role to present statements in an appropriate level of caution or uncertainty. Epistemic modality was especially explained in terms of hedging by Lakoff (1972) over 3 decades ago referring to making things fuzzier. Myers (1989) also asserts that hedging in scientific writing could be a politeness strategy. Hyland (1996) did a study on *Nurturing hedges in the ESL curriculum* to learn the types and the amount of hedging expressions in cell and molecular biology research articles. Choi and Ko (2005) did a hedging study in EFL academic writing of Korean postgraduates to compare with the study done by Hyland (1996).

To compare the use of hedges across languages and disciplines, Vold (2006) did a study on the subjects of English, French, and Norwegian. The results of her study reveal that

Norwegian and English speaking researchers use significantly more of these hedges than their French speaking colleagues.

Since some of the previous research studies including the one done by Lee (2007) on hedging expressions of medical research abstracts already revealed the difficulties in this area, this study is not to emphasize such difficulties.

III. METHOD

1. Data

This study could be described as quantitative description on the data collected from the 52 second-year medical students in English Reading & Writing class in their third semester of the two-year English curriculum. The class met once a week for three hours during the 16-week course. The study is based on the analysis of the writing assignment titled "How to mend a broken heart" from the textbook, *Writing Academic English* (Oshima & Hogue, 2006 p. 86). The topic was selected as majority of them wanted from the textbook list. As some of them already experienced breaking up in their relationship, it seemed like a relevant topic for their age and circumstance. Compared to other previous writing topics, they were eager to come up with their own suggestions. Prior to this assignment, the students were given lectures on each chapter a week and practiced writing according to the instructions of the textbook. This particular process essay writing assignment was given to learn their ability on the epistemic modality. Based on the personal experience, subjects were to provide suggestions. Though the writing assignment was not research type paper, the format of the writing was academic paper. All the writing assignment was collected after 100-minute writing session and reviewed in terms of epistemic modal verbs, sentence adverbials, and epistemic expressions on providing suggestions and/or propositions. The present study did not include any aspect of grammatical and mechanical errors in the writing but only focused on the epistemic modal verbs and epistemic expressions.

2. Data Analysis Procedure

As part of the English curriculum, all the medical students are required to take the TOEIC or TEPS or TOEFL in their second year with a minimum requirement score of 700 for the TOEIC, 650 TEPS, and 220 CBT TOEFL. Their scores were recorded to see if high scores yielded more epistemic modal verbs and/or more epistemic expressions or more word use in the writing. All the writing assignment was collected and analyzed on a master sheet. Female and male students were then separately reviewed to see if there was any

gender difference. The number of words in sentences and the types and frequency of epistemic modality were recorded. Each type of epistemic modal verbs and expressions including adverbials, such as *certainly, surely, seemingly* and adjectives, such as *sure, certain, positive* was kept track. And each item of the listed epistemic modality and expression was then recorded depending on the frequency of each student used.

IV. RESULTS AND DISCUSSION

The results of the TOEIC revealed that the average score of the total 52 students was 804, showing the scores of the female students higher (about 20%) than those of the male students by 16 points, 811 whereas 795 for males. Since 5 students took the TEPS and the rest 47 took the TOEIC, 60 points were added to the scores of the ones who took the TEPS to calculate the mean score. This calculation was based on the fact that the previous cases revealed the students who took both tests TOEIC and TEPS showed the scores of the TEPS approximately 60 points lower than those of the TOEIC. The highest score of the female students was 980 and the lowest 700. On the other hand, the highest score of the male students was 946 and the lowest 685. The lowest score of 685 did not meet the minimum requirement, but exempted since he was a returnee from the class year of which the current requirement was not enacted. Approximately a half of the students scored over 800. Table 1 shows the range of the scores and the percentage of the score range.

TABLE 2

TOEIC Score Range of Female and Male Students

TOEIC Score Range	Female	Male
685 – 700	0	1 (3%)
700 – 799	8 (42%)	18 (54%)
800 – 899	7 (36%)	9 (27%)
900 – 980	4 (21%)	5 (15%)
Total	19 (100%)	33 (100%)

Regarding the number of sentences and words used, these students used the average of 292 words in 24 sentences showing 12 words in each sentence. To see if there was any gender difference, the study analyzed both female and male students separately. Nineteen female students were in the class but three were absent on the day of the assignment thereby excluded from the further analysis. They wrote the average of 318 words in 25 sentences showing each sentence comprised of 13 words. On the other hand, 33 male

students used 265 words in 23 sentences. It showed that female students used approximately 20% more words than male students and their TOEIC scores were also 20% higher than those of the male students. Then the correlation analysis between the TOEIC and the number of sentences and the number of words was done and the results showed r=0.1733 and r=0.5656 respectively for female students and r=-0.1883 and r=0.2701 for male students. In other words, there were no correlation between the TOEIC scores and the number of sentences written by the students. It appeared that higher TOEIC scored female students tended to use more words in writing but this tendency did not hold true for male students.

Table 3 shows the number of students for this study, number of average sentences and words, and the average TOEIC scores.

TABLE 3

Number of Students, Average Sentences and Words Used, and the Average TOEIC Scores

	N (%)	Sentences	Words	TOEIC
Female	19(36%)	25	318	811
Male	33(64%)	23	265	795
Total	52(100%)	24	292	804

The Table 4 and Table 5 show the list of each student with the TOEIC scores, number of sentences and words used, and epistemic modality for both female and male students.

TABLE 4

The List of Student, TOEIC Scores, No. of Sentences & Words, and Epistemic Modality (Female Students)

Name	TOEIC	Sentences	Words	Epistemic Modality
SJ	830	21	226	can, could, would, will
JJ	900			Assignment not submitted
HK	740	25	349	can, may, will, need to, have to, should, might
HG	755	23	258	can, could, will, would, never, think
SJ	700	23	263	can, must, never, suggest, think
SY	745	22	263	can, have to, need to, must
JH	820	27	283	can, need to, may, should, suggest
SI	890	29	303	can, could, might, have to, will, must
SA	800	20	295	can, may, need to, have to
HA	725	25	273	can, must, will, should, maybe
DR	788*	25	380	can, have to, may, will, never

YC	815	21	279	can, should, will
YJ	710	23	262	can, may, must, will, believe
EJ	815			Assignment not submitted
HR	730	32	392	could, need to, would, might, must
SY	915	25	335	ought to, should, will, would
YM	915	23	371	will, need to, be going to, probably, finally
JY	830			Assignment not submitted
SH	980	28	552	seem to, might, may, should, never, probably

* For the TEPS score submitted, 60 points were added as the test result is usually 60 points lower than the TOEIC.

As shown in the table, the student with the highest TOEIC score wrote the longest essay using 552 words in 28 sentences showing her sentences were almost twice as long as others. However, her epistemic modality did not show any significant difference in terms of the types and quantity. The shortest essay was written by the student whose TOEIC score was 830 using 226 words in 21 sentences. The types of epistemic modality and the TOEIC scores were not correlated.

TABLE 5

The List of Student, TOEIC Scores, No. of Sentences & Words, and Epistemic Modality (Male Students)

Name	TOEIC	Sentences	Words	Epistemic Modality
GH	730	16	163	can, will
BS	820	29	347	can, will, may, must, think
SH	785	24	240	can, could, need to, would, always, think
DH	739*	22	359	can, have to, need to, will, may, tend to, probably, think
MC	910	17	228	can, could, had better. Will
SR	770	30	319	can, have to, must, will, think, in my opinion
JW	790	32	415	can, have to, will, would, always, think, suggest
JS	870	17	266	can, will, need to
JW	685	24	202	can, must, will, always, never
KS	740	22	265	can, will, may, think
KH	705	12	102	may, never
SP	885*	21	271	could, maybe, would, seem to, sure, think, suggest
JS	805	26	280	need to, must, will, would, might, should, have to, recommend

HS	745	28	336	can, may, will, would, perhaps
CW	725	30	276	can, may, will
YS1	750	27	290	can, must, will
YS2	765	29	224	can, must
JH	946*	26	370	can, could, may, seem, have to, will, recommend
WY	905	16	179	can, be going to, must, gradually, in my opinion
JH	920	15	272	can, might, may, should, would, seemingly, believe
GS	815	31	265	can, may, will, maybe, never, perhaps, recommend, believe
JW	810	21	205	can, will, should, may, need to
DH	715	32	303	can, may, must, seem, always, finally, usually
SJ	705	26	268	can, should, must, would
WS	795	27	304	can, should, will, would
JM	845	21	284	can, have to, think
CH	710	22	205	can, could, will, would, have to, probably, recommend
JS	857*	24	266	can, have to, need to, would, think
YJ	940	22	420	can, will, would, must, should, obviously, eventually
JB	715	16	182	can, have to, will, have to, think
EJ	715	22	260	may, maybe, have to, need to, always
BH	755	16	205	can, could, will, would, had better, somewhat, think
SW	875	21	159	can, must

Among the male students, the one with the second highest TOEIC score of 940 wrote the longest essay using 420 words in 22 sentences, but his writing did not show any significant difference in epistemic modality. The shortest essay was written by the student whose TOEIC scores were 705 using 102 words in 12 sentences. There seemed to be no correlation between the TOEIC scores and the number of sentences and the number of words used as correlation coefficient r=-0.1883 and r=0.2701 respectively indicated. Those high scored students did not write more sentences with more words.

Then each item of epistemic modality was counted by the frequency each student used, and Table 6 shows the list of the most frequently used epistemic modality.

TABLE 6

Most Frequently Used Epistemic Modality

Modal Verbs	N	%
can	40	81%

will	33	67%
may	18	35%
would	17	34%
must	17	34%
have to	15	30%
need to	14	28%
should	12	24%
could	11	22%
might	6	12%
seem	5	10%
be going to	2	4%
tend to	2	4%

Adverbials	N	%
maybe	4	8%
never	7	14%
always	5	10%
probably	4	8%
usually	3	6%
finally	2	4%
perhaps	2	4%
eventually	1	2%
seemingly	1	2%

Other Expressions	N	P%
I think	10	20%
I suggest	6	12%
I believe	3	6%
I recommend	3	6%
I am sure	3	6%
In my opinion	3	6%

Out of as many as 350 different kinds of lexical devices in English that can be employed for epistemic function claimed by Holmes (1988, p. 27), the Korean medical college students participating in the present study used only a dozen of epistemic modal verbs and a few of each adverbial and adjective for epistemic expressions. As it was already revealed in Choi and Ko's (2005) study of hedging in EFL academic writing of Korean

postgraduates compared with the counterparts in the U.S., the figures in the current study seem to be somewhat limited to state that the students possess the adequate understanding of the epistemic modality.

V. CONCLUSION AND IMPLICATIONS

Although numerous studies have been done in the aspect of enhancement in writing ability enhancement, no one can assert that students' writing can be developed or enriched by one magic theory or method. This study was carried out to be of help to those learners of English for specific purposes, more precisely, medical purposes at this medical institution. However, this may not rule out any other professionals since the research papers and studies state proposition, suggestion and conclusion when writing in English.

The results show that ESP students in medical field use very limited number of epistemic modal verbs and sentence adverbials. These students' most frequently used epistemic modal verbs were *can, will, may, would, must,* and *have to* in the order of the frequency. There were only two students who used sentence adverbials like *seemingly* and *eventually*. Some students used strong sentence adverbials like *never* and *always* to provide a suggestion. Among this highly intelligent group with the TOEIC scores of between 685 and 980, the TOEIC scores and the number of words used in sentences or the types of epistemic modality used in their writing did not seem to have any correlation.

The strategy to understand accurate functions of the epistemic modals and epistemic verbs plays an important role in academic writing as well as research papers. As it was already noted in Lee's (2007) study on error analysis & hedging expressions, hedging is defined as the speech act of "starting a proposition" in academic writing by Crompton (1997, p. 273). It is especially important to state a research proposition with proper degree of certainty or doubt. In this respect, acquiring the ability to use the adequate knowledge on the epistemic modal verbs and epistemic sentence adverbials is ultimately important. Researchers and textbook writers need to include a wide variety of lexical devices for epistemic functions and have L2 learners practice them in the diverse settings of English learning. Some of the sentence adverbials may include *clearly, undoubtedly, presumably, in fact,* and *overall* just to name a few.

There is a limitation in the study, however. The sample size was based on the only one class of a medical college with 52 students and it was a homogeneous group of highly academically advanced students. A larger sample size might render a different conclusion.

REFERENCES

Allison, D. (1995). Assertions and alternatives: Helping ESL undergraduates extend their choices in academic writing. *Journal of Second Language Writing, 4,* 1-15.

Belcher, D., & Braine, G. (Eds.). (1995). *Academic writing in a second language: Essays on research and pedagogy.* NJ: Ablex.

Celce-Murcia, M., & Larsen-Freeman, D. (1999). *The grammar book: An ESL/EFL teacher's course* (2nd ed.). Boston, MA: Heinle & Heinle.

Choi, Y. H., & Ko, M. S. (2005). Hedging in EFL academic writing of Korean postgraduates. *English Teaching, 60*(1), 3-27.

Coates, J. (1983). *The semantics of the modal auxiliaries.* Beckenham: Croom Helm.

Crompton, P. (1997). Hedging in academic writing: Some theoretical problems. *English for Specific Purposes, 16.* 271-287.

Gabrielatos, C. & McEnery, T. (2005). Epistemic modality in MA dissertaion. In P. A Fuertes Olivera (ed.), *Lengua y Sociedad: Investigaciones recientes en linguistica aplicada.* Linguistica y Filologia no. 61. Valladolid: universidad de Valladolid, 311-331.

Haley-James, S. (1982). Helping Students Learn through Writing, *Language Arts, 57*(7).

Halliday, M. (1994). *An introduction to functional grammar* (2nd ed.). London: Edward Arnold.

Hermeren, L. (1978). *On modality in English: A study of the semantics of modals.* Lund: CWK Gleerup.

Holmes, J. (1982). Expressing doubt and certainty in English. *RELC Journal, 13*(2), 9-28.

Holmes, J. (1983). Speaking English with the appropriate degree of conviction. In C. Brumfit (Ed.), *Learning and teaching languages for communication: Applied linguistics perspective* (pp. 100-121). London: CILT.

Holmes, J. (1988). Doubt and certainty in ESL textbooks. *Applied Linguistics, 9,* 20-44.

Hoye, L. (1997). *Adverbs and modality in English.* London: Longman.

Hu, Z., Brown, D., & Brown, L. (1982). Some linguistic differences in the written English of Chinese and Australian students. *Language Learning and Communication, 1,* 30-49.

Hyland, K. (1994). Hedging in academic writing and EAP textbooks. *English for Specific Purposes, 13,* 239-256.

Hyland, K. (1996). Nurturing hedges in the ESP curriculum, *System, 24*(4), 477-490.

Hyland, K., & Milton, J. (1997). Qualification and certainty in L1 and L2 students' writing. *Journal of Second Language writing, 6*(2), 183-205.

Jordan, R. R. (1997). *English for academic purpose: A guide and resource book for teachers.* Cambridge: Cambridge University Press.

Krashen, S. D. (1984). *Writing research, theory and applications.* Oxford: Pergamon Institute of English.

Lakoff, G. (1972). Hedges: A study of meaning criteria and the logic of fuzzy concepts. *Chicago Linguistics Society Papers, 8,* 183-228.

Lee, E. (2007). A study on error analysis & hedging expressions of medical research abstracts. *English Language & Literature Teaching, 13*, 1 47-66.

Leech, G. & Svartvik, J. (1983). *A communicative grammar of English* (2nd ed.). London: Longman.

Lyons, J. (1977). *Semantics*, Vol. 1 & 2. Cambridge: Cambridge University Press.

Makalela, L. (2004). Differential error types in second-language students' written and spoken texts. *Written Communication, 22*, 368-385.

McEnery, T., & Kifle, N. (2002). Epistemic modality in argumentative essays of second-language writers. In T. Flowerdue (Ed.), *Academic discourse* (pp. 182-195). London: Longman.

Myers, G.. (1989). The pragmatics of politeness in scientific articles. *Applied Linguistics, 10*, 1-35.

Nunan, D. (1989). *Designing tasks for the classroom.* Cambridge: Cambridge University Press.

Oshima, A., & Hogue, A. (2006). *Writing Academic English* (4th ed.). Pearson Education, Inc.

Palmer, F. R. (1979). *Modality and English modals.* London: Longman.

Quirk, R., Greenbaum, S., Leech, G., & Svartvik, J. (1985). *A comprehensive grammar of the English language.* London: Longman.

Vold, E. T. (2006). Epistemic modality markers in research articles: a cross-linguistic and cross-disciplinary study. International *Journal of Applied Linguistics, 16*(1), 61-87.

Examples in: English
Applicable Language: English
Applicable Levels: College

Eunpyo Lee
Dept. of Medicine
Eulji University
143-5 Yongdu 2-dong, Jung-gu
Daejeon, 302-872, Korea
Tel: (042) 259-1613
Fax: (042) 259-1619
Email: elee@eulji.ac.kr

Seungwon Park
Dept. of Children's English
Hannam University
133 Ojeong-dong, Daedeok-gu
Daejeon, 306-791
Tel: (042) 629-7381
Fax: (042) 629-7306
Email: psew65@paran.com

Received in Jan., 2008
Reviewed in Feb., 2008
Revised version received in Mar., 2008