

TOWARD THE CHARACTERIZATION OF THE EFFECTIVE STRUCTURAL FEATURES AND LANGUAGE FUNCTION OF ENGLISH USED BY THE BIOLOGY TEACHERS OF THE JUNIOR HIGH SCHOOLS TO CONDUCT VARIOUS INSTRUCTIONS

Dwi Ima Herminingsih
Fakultas Ilmu Sosial dan Politik
dwima2008@yahoo.com

Abstract:

Using English as a medium of instruction provides linguistic benefits to the students. English which is used can elevate vocabulary, grammar and language functions of English. Besides, the students get more chances to practice writing, speaking, reading and listening during teaching and learning activities. Under this belief, the teachers are prescribed to be competent not only in content of subjects but also English. The teachers possession of vocabulary, grammar, and language functions is a must. It is only with the clarity of English, the teachers can help the students comprehend what the teachers feel think, instruct, command, describe, explain, clarify and so forth. This research project works with the identification of structural features and language function of English used by 3 selected Biology teachers of different Junior High Schools who are competent in English and the content of subject. This research is a qualitative design.

Abstrak:

Penggunaan Bahasa Inggris sebagai bahasa pengantar dalam proses kegiatan belajar mengajar dapat memberikan manfaat untuk meningkatkan kemampuan bahasa Inggris siswa. Siswa mendapatkan pengetahuan tambahan tentang kosa kata dan kaidah bahasa Inggris dari materi atau referensi yang sedang dipelajari, bahasa Inggris yang dipergunakan guru dan teman. Selain dua manfaat tersebut kemampuan siswa membaca, berbicara, menulis serta mendengarkan akan dilatih ketika mereka harus mengerjakan tugas-tugas gurunya seperti membuat laporan praktikum, berdiskusi, tanya jawab dan mempresentasikan hasil kerjanya. Dalam perspektif ini, guru harus memiliki kemampuan di bidang kosa kata, kaidah bahasa dan kemampuan menggunakan dua komponen bahasa sesuai dengan tujuan intruksionalnya seperti misalnya menjelaskan materi, bertanya, memberi tugas dan lain-lainnya sehingga tujuan belajar pembelajaran dapat dicapai. Penelitian ini mengidentifikasi tipe komponen dan kaidah-kaidah bahasa Inggris yang bisa membantu siswa memahami apa yang disampaikan guru dalam kegiatan belajar mengajar yang dipergunakan guru Sekolah Menengah Pertama bidang biologi. Tiga guru bidang biologi yang memiliki kompetensi bahasa Inggris dan materi pelajaran biologi dipilih sebagai subjek penelitian.



Key Words: Effective structural feature, language function, English

A. Background

Using English as instructional language for Mathematics and Science is optionally applied by any school model of Junior High School. Linguistically the policy advantages to the students. They are enriched with grammar, vocabulary and language functions introduced by the Biology teachers talk, learning materials, and peer. Besides, chances are given to the students to use English when the teachers assign various tasks either in the classroom or in laboratory. Those tasks facilitate the student using English for presenting works, questioning, discussing, arguing, describing, writing lab report, and others.

In this regard, the teachers are obliged to be competent in using an effective instructional to avoid sacrificing the students' understanding of content. The teachers English competence is indicated by the possession of vocabulary, grammar and ability to use these language components appropriately to its functions for conducting various instructions.

B. Objectives of the Research

The study was generally intended to explain how English was effectively used by the Biology teachers as a medium of instruction. Specifically, the research aimed at describing: (1) The structural features of English which were effectively used by the Biology teachers to achieve the instructional purposes in certain contexts of instruction. The structural features of English were classified into (2) The vocabulary of English which was effectively used by the Biology teachers to achieve the instructional purposes in certain contexts of instruction. (3) The grammar of English which was effectively used by the Biology teachers to achieve the instructional purposes in certain contexts of instruction. (4) The language functions of English which were effectively used by the Biology teachers to achieve the instructional purposes in certain contexts of instruction. The language functions of English were divided into: (5) The languages function of English which was used by the Biology

teachers in certain application of instruction.

(6) The languages function of English which was used by the Biology teachers in science instruction. (7) The languages function of English which was used by the Biology teachers in vocabulary instruction.

C. Review of Related Literature Communicative Competence

Communicative competence is explained in different ways by experts. Hymes (1972) wrote communicative competence as an implicit and explicit knowledge of the rules of grammar and contextual or sociolinguistic knowledge of rules of language in context. He mentioned four aspects of communicative competence: what is formally possible, what is feasible, what is the social meaning or value of a given utterance, and what actually occurs. Canale and Swain (1980) defined communicative competence in the context of second language teaching. They synthesized communicative competence as a synthesis of knowledge of basic grammatical principles, knowledge of how language is used in social settings to perform communicative functions, and knowledge of how utterances and communicative functions can be combined according to the principles of discourse.

Canale and Swain (1980) classified communicative competence into grammatical competence, sociolinguistic competence, discourse competence, and strategic competence. Grammatical competence means the acquisition of phonological rules, morphological rules, syntactic rules, semantic rules and lexical items. Sociolinguistic competence refers to the learning of pragmatic aspect of various speech acts, namely, the cultural values, norms, and other socio-cultural conventions in social contexts. The speech acts include the context and topic of the discourse the participants social status, sex, and age, and other factors which influence styles and registers of speech. Since different situations call for different type of expressions as well as different beliefs, views, values, and attitudes, the development of sociolinguistic competence is essential for communicative

social action. Discourse competence is the knowledge of rules regarding the cohesion (grammatical links) and coherence (appropriate combination of communicative functions of various types of discourse. Canale and Swain (1980) emphasized that sociolinguistic rules of use and rules of discourse are crucial in interpreting utterances for social meaning, particularly when the literal meaning of an utterance does not lead to the speaker's intention easily. Strategic competence is to do with the knowledge of verbal and nonverbal strategies to compensate for breakdowns such as self-correction and at the same time to enhance the effectiveness of communication such as recognizing discourse structure, activating background knowledge, contextual guessing, and tolerating ambiguity.

Gottlieb (2006) identified that Academic Language proficiency centers on the delivery of understanding of an idea or message through one or more language domains; listening, speaking, reading, or writing. It generally involves three criteria: (1) comprehension and use of the specialized or technical vocabulary and language patterns associated with content, (2) linguistic complexities of variety and length (phonology, syntax, and meaning), (3) demonstration of understanding or use of language system such as phonology, the grammatical structure, and the meaning of the language.

Meanwhile, Stern (1983) claimed language proficiency as the actual performance of learner in a given language, it involves the mastery of (1) the form, (2) the linguistic, cognitive, affective and sociocultural meaning of those form, (3) the capacity to use the language with focus mainly on communication and attention to form. Language proficiency is associated with

Communicative language ability involving linguistic proficiency and communicative proficiency.

Bachman (1990) argued language proficiency reflects how well one can use the rules of use of language and the rules of

speaking in communication in specific situation setting purpose activities. Language Proficiency is individual's competence to use language or an expression of students linguistic knowledge and language use in four language domain, reading, writing, speaking, and listening in and outside school contexts and interactions.

Cummins (1981) suggested two kinds of language ability that should be acquired when science taught in foreign language or second language. First, the science teacher has to have Basic Interpersonal Communication skills (BICS). BICS is needed in interpersonal relations or in informal situation. BICS is the day-to-day language needed socially with other people. The language can occur in the playground, lunch room, the school bus, sport area etc. Social

Interactions are usually context embedded. They happen in a meaningful social context. They are not very demanding cognitively meaning that they are not dealing with synthesis, drawing conclusion, inferring. The language is not specialized. The language is face-to-face

Conversations (verbal language), for instance, nonverbal features like gestures, body movement and facial expressions all convey meaning and aid understanding. Due to contextual support, a second language is more easily acquired in this context-embedded situation. However, a student's good performance in BICS is not a predictor for her/his success in schools.

Second is cognitive academic language proficiency (CALP). Cummins (1981) defined CALP is a kind of language proficiency to make sense of and use academic language in less contextual situations. CALP is required in the classroom, where higher-order thinking skills (analysis, synthesis, evaluation, etc.) are involved, the language is frequently more formal, more

Technical, more specialized, and more abstract disembodied from a meaningful supporting context. This context reduced classroom communication

this context reduced classroom communication (in listening, speaking, reading and writing) would certainly pose more difficulty to students and teachers in acquiring language and literacy in English. Even if they have adequate literacy skills and strategies in Indonesian (top-down processing)- and these are transferable to English, still they are not sufficient conditions for a thorough comprehension of texts in English, for instance. Adequate knowledge of language and skills in English vocabulary, grammar and orthography are also necessary components for a full understanding.

D. Language Functions

There are over a hundred functional heading in English. In relation to an individuals need, for example, sociocultural language function is dominant. In the academic contexts, every teacher needs to communicate with the students. He/she needs a particular language function such as a personal, interpersonal, directive, referential, and imaginative. He/she learns to use language of expression of greeting, requesting, apologizing, questioning, and getting direction, giving information, like, dislike. (Halliday, 1973, Van Ek s, 1980 and Finocchiaro, 1983).

E. Research Method

The research employed qualitative method to characterize the biology teachers English structural feature and language function. The stage of TOEIC score s of conducting the research: (1) preliminary study, (2) distributing questionnaire and documentation of TOEIC score to select the subjects of research who had a positive attitude toward the use of English as a medium of instruction and the teacher's English sufficiency and (3) the observations of teaching practices.

F. The Research findings and Discussions

Three categories of effective vocabulary were used within three contexts

of instructions, namely: (1) High Frequency General Words (words that are used regularly in everyday context). For Examples: read, discuss, answer, be quite, look at, good, cold etc (2) Non Specialized Academic Words (words that are used across content area). For Examples: fish, river, forest, exploitation etc and (3) Specialized Content Area Words (academic words unique to specific content area/conceptual terminology of science). For examples: mutualism pollen, biosphere, food chain etc within three contexts of instructions (application of instruction, science instruction and vocabulary instruction). Three categories of these effective words were used in the domain of the social functions and the academic functions. In the domain of social functions, the vocabulary of English category (1) was used to build interpersonal communication such as to direct the students physical behaviors, to give the orders or the tasks, to greet, to express feelings wants, needs and to have leave-takings. In the domain of the academic function, the vocabulary categories (2) and were used for the purposes of explanations, descriptions, clarifications, comparisons, and assessments, paraphrasing in the contexts of application of instruction, science instruction and vocabulary instruction. The vocabulary category (3) was less captured because the given teaching materials cover only two subtopics. The vocabularies the Biology teachers used involved the content word of verbs, nouns, adjectives, adverbs, pronouns, prepositions, conjunctions and interjections.

Four sentence patterns (the declaratives, the interrogatives, the imperatives and the exclamatory) were found effectively used within the three contexts of instructions. In the context of application of instruction, the Biology teachers found using those sentence patterns for greetings, leave-takings, appreciating the student works, directing the students behaviors, directing the students to do the tasks. In the context of science instruction, the declaratives were used for explanations, descriptions, comparisons, clarifications and

paraphrasing. The interrogatives were used to assess the students knowledge and the clarifications. The question words began with witch, what, why, can, may, and to be. The imperatives were used for directing the instructions and the students behaviors. The exclamatory was used to express the Biology teachers excitements, admirations or angers. The Biology teachers were observed using the Basic sentence pattern that consists of subject plus predicate. The subject was Noun-Phrase (NP). The predicate was Verb-Phrase(VP). A sentence transformation from the affirmatives to the interrogatives and the negatives were chosen for certain instructional purposes. The Biology teachers dominantly used simple sentences to avoid the students misconceptions and misunderstandings. Complex sentences were only used if the ideas were not possible expressed using simple sentences. The findings revealed the teachers used past tense and non-past tense (the simple present and future tenses). The non-past tense was used to refer to the facts, events that were not in the past.

In the domain of social functions, the findings showed that no language supports appeared when the Biology teachers had to use High Frequency General Words, Non-Specialized Academic Words, and Specialized Academic within three contexts of instruction (application of instruction, science instruction and vocabulary instruction) for the personal conversations in the classroom. This situation happened because both the Biology teachers and the students could recognize the ordinary or non-academic meaning of general English.

A different case happened when the Biology teachers had to use the academic words. The three Biology teachers were found using the scaffolding strategy to lower the abstractness, the uniqueness, the level of difficulty and the particularity of academic vocabulary. Several ways were taken by the three Biology teacher to avoid the students misunderstandings. Tree Biology teachers were observed struggling to solve their instructional problems. They helped the

students get the meaning of the introducing academic words by employing certain instructional strategies. They did highlight the academic vocabulary in the subject they taught by using the language switching, doing translation from English to Indonesian, giving definitions, providing synonyms, examples, visuals, the real objects and doing repetitions, description and the explanation of science concepts to transfer the meaning of words to the students understanding.

Beside instructional strategies, figures were chosen as another alternative help to make the students understand science instruction. For example, when the students did not understand the explanation about the interaction happen between organisms in certain ecosystem and concept of parasitism, the Biology teachers were found providing the examples, simile and comparison. They applied also the general approaches of language teaching. They prepared glossary/list of words before starting a new lesson. In a certain case, Total Physical Response seemed to be also effectively used to instruct the vocabulary. The vocabulary instruction involved the students in a contextual learning. The Biology teachers asked the students do concrete experiences like doing the experiments in the live laboratory (in the yard and the garden) to communicate the meaning and help the students remember a wide range of extensive vocabulary.

In the domain of academic functions, three Biology teachers used English for the explanations, the descriptions, the comparisons, the assessments, and the clarifications and paraphrasing. These language functions were used within the application of instruction, the science instruction and the vocabulary instruction. In the context of application of instruction, the Biology teachers used the explanations and descriptions to direct the students do the tasks. In the context of science instruction and vocabulary instruction, the Biology teachers used the six integrated language functions. The explanations were used to indicate the scinetific relationships, guide the students understanding of the scientific

concepts and gave the reasons for the scientific theories and the experiments. The explanations were also used to give the scientific reasons for theories and experiments. The descriptions are used to provide the students background knowledge of the scientific concept. The descriptions were clarified by relating a real world and a science. The language function of comparisons were used to compare a new scientific theory, concept, or fact to another theory, concept, or fact that was understandable to the students and the similarities and differences among two or more scientific theories, concepts, or facts. The language functions of clarifications were used to repair the student misunderstanding of scientific concepts.

G. Conclusions

The research findings opened up the fact that English used by three observed Biology teachers worked effectively to conduct various instructions. Data gathered from the observations and interviews justified the evidence that the classroom interaction run well. The decision of three Biology teachers to choose the use of simple and ordinary English aid the students understand what the teachers instructed. This happened because the English used stood in the reach of the student level English proficiency. The vocabulary, grammar of English they used confirmed the students needs and content of subject. Hereby, the teachers English was Easy to understand. In addition, the English used by the teachers seemed appropriate to function of English that were demanded by the needs of application of instruction (directing students physical behaviors, giving orders or tasks), the science instruction (imparting theories, the concepts, facts and information) and vocabulary instruction (helping the students understand vocabulary.

Suggestions

Having reviewed, synthesized the theoretical framework underlying the focus of my research project, the result of data

interpretation, then compared my research findings to the studies by former researchers, the researcher is of the opinion that this work probably raises the science teachers science teachers awareness of the significance of using English as a medium of instruction to the students whose mother tongue is not English like in Indonesia. Using English as a medium of instruction shares linguistic and academic advantages. Linguistically, the findings of this research reveal the knowledge of linguistic aspects such as the vocabulary, grammar and language function are exposed to the students while they are learning Science-Biology. These three language aspects probably convey a valuable contribution to the process of students English mastery. These English language inputs are expected to be modalities to develop the students communicative skills. And the ways how the Biology teachers use English become one learning source for the students.

The researcher assumes, by the time, the students will get into a good habit of listening, reading, writing, and speaking English if they are often drilled to hear and to use the words and the sentences. The regular use of English gradually and naturally leads the students to the position of the working English proficiency level useful for both the academic life and the workplace although it will take few years to establish. Under the view of this conceptual framework of language acquisition, the habit of practicing English in active and passive English skills is viewed as a generator to energize the students motivation to improve their English.

Academically, the offering content materials can widen the students horizon about event, facts, phenomena that are very close to the students life. They can learn a lot about the natural process, system, product in plants, animals. The upgrading of quality of the student

graduations might make them internationally acknowledged.

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