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THE LANGUAGE FUNCTIONS USED BY TEACHERS OF CONTENT SUBJECTS USING ENGLISH AS THE MEDIUM OF INSTRUCTION
(The Case of Mathematics and Science Teachers in *Semesta* Bilingual Senior High School)

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Info Artikel

Abstract

This study aimed to describe the social and academic language functions of English employed in teaching content subjects and to explain the problems faced by the teachers when they taught content subjects using English. The data were obtained through classroom observation by recording the teaching and learning process with four different content teachers. The descriptive qualitative approach was usedto analyze the results of the study. The findings showed that 3 out of 4 content teachers had employed all kinds of social language functions. It indicated that they had a good ability to manage the classroom. In dealing with the academic language functions, it was found that all of the teachers had not used all kinds of academic language functions yet. It indicated that the teachers gave input more to the students by informing as mostly used. The result of this study revealed that the problems faced by teachers in using English were related to grammar,vocabulary, and pronunciation. Employing social and academic language functions are crucial for teachers. Social language functions maintain the social relationship among the teacher-students especially in managing the classroom. Meanwhile, the academic language functions give deeper knowledge and skills related to the content material.

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INTRODUCTION

Education is the most important one to be drawn attention to. It is because the goal of the education itself which creates the new generations to be ready born to compete with others in global competition. To support this sector, Cummins (2005) thinks that government policies should attempt to influence the processes of education by supporting the teaching of certain languages in schools and, in some cases, by actively discouraging the maintenance of other languages, usually the languages of subordinated groups within the society. The other language which is meant here is a language that can be used to communicate to the others around the world.

English is considered to be one of the languages which is used as a lingua franca, for bridging people communication, and the most suitable language to use in education area as a medium of instruction in teaching and learning process. In Indonesia, English has been taught as a foreign language subject in all educational level. It starts from preschool, primary, secondary till the tertiary one. It is so important to learn English actually from very early year for the sake of preparing the generations who have intelligible knowledge in order to be able to compete in this globalization era in which the development of the technology and science has ascended.

In line with this then, the Indonesian government develops a policy which is stated in the Law of National Education System No. 20 Year 2003 Article 33 Verse 3 about the use of foreign language in teaching and learning process. It is said that a foreign language can be used as the medium instruction in a certain education unit to support the students' language competence (National Education System, 2003). The foreign language in this case is English.

Since English still becomes foreign for Indonesian learners, most of them have got problems when learning on it. Sundusiyah (2010) indicates that the problems appear because of the low exposure of English in society. Suharyadi (2010) supports that some students are successful in learning and mastering English when they are still going to school and when they are in English class.

Then, when they have graduated, it vanished slowly since they hardly get exposures to English.

From those phenomena, some educational stakeholders create a positive stigma by creating English class atmosphere in which English is taken and needed on every occasion, not only in English subject classes. Afterwards, the concept of bilingual system begins to be implemented. Cummins (2005) argues that by using two languages in teaching and learning process, it can sharpen and enrich the students' knowledge and also the exposure of those two languages.

In doing so, however, the concept of bilingualeducation which uses two languages those are Indonesia and English in one occasion should be understood well. Some content subjects, such as mathematics and science, are taught bilingually. It is a challenge indeed, not only for the students but also the teachers themselves. That is because the exposure of English as foreign language in Indonesia is very broad particularly on the use of language functions themselves. It is also probably hard to implement this concept of bilingual education, especially in the rural area where the technology support should exist.

There are two kinds of language functions which are important in dealing with teaching content subjects. They are social and academic language functions. Social language deals with the language which is used for the purpose of interaction in social settings, in the classroom context, it is the language use on how to interact with students, for example greeting, asking for clarification, addressing one student to another, etc. Meanwhile, academic language deals with the language which is used for the purpose of acquiring new knowledge and skills. It is more complex indeed because some special words or terminologies in certain area or subjects are needed especially for explaining, identifying, analyzing, etc. Both language functions are important. They are supporting each other particularly to make the communicative events in teaching content subjects. Therefore, the teachers should know about the importance of the use of language functions in teaching content subjects.

Indonesian teachers themselves are now still facing criticism as having less than adequate English performance. The most important thing

that should be known by the teachers is their professionalism. The correlation between teachings as a construct is not able to provide a strong impact on the performance of the student (Mansor et.al, 2011). The performance of students is also affected by the attitude of teachers and vice versa. Not only teachers are to be in charge of this phenomenon but the curriculum developers do. There is an even emerging need to counterbalance the power of policymakers in ensuring that up-to-date, balanced, pedagogically sound education policies and EFL curriculum are produced, carried out, and monitored (Lie, 2007). Education is too important to be left to the policymakers in determining its success and failure.

From those above elaboration, this study is finally conducted to investigate the use of English as a medium of instruction in content subject (mathematics and science) in Semesta Bilingual Senior High School. More specifically, the language functions of English which are assumed to be effective to conduct application of instruction (directing students' physical behaviors, giving orders or tasks), the math and science instruction (imparting theories, the concepts, facts and information) and vocabulary instruction (helping the students understand vocabulary).

Social language is the language used in everyday communication to takes part in society. Chamot and O'Malley (1994: 40) describes social language is the language that is used for the purpose of instruction in social settings. It deals with uncomplicated topics that simple and familiar to speakers. For example, greeting, checking student's understanding, addressing students, etc. The basic purpose is to make an interaction between students and teachers. The social language also can be called as Basic Interpersonal Communicative Skills (BICS) that describe everyday language that is helped by contextual support such as body language, facial expression, straight forward communication skills (Baker, 2001:169). Most interpersonal communication provides a great deal of contextual support. It is fairly easy for a second language learner to pick up the language and skills necessary for such communication. Some conversational situations provide less contextual support, however, such as conversing on the phone. In this case, all aids to

comprehension must be provided solely through the medium of oral language. The main purpose of this kind of communication is how to maintain the relationship between the interlocutors.

Social language is much closed with the use of the common language. The language used for daily interaction. Coanca (2011) defines the common language is unmarked and it is based on the daily non-specialized exchange. In simple words, it can be said that the common language is a language which uses common words to convey it. The common words are the words used in daily life to communicate. It does not need a specialized skill of a particular area.

In the context of classroom, social language is important to be implemented not only for language subject but also in content subjects. It is very useful to make the teaching communicatively; which then has relation to the classroom management. In line with this, Hughes (1990: 9-11) proposes the various language functions that deal with classroom English management which aims to make interaction socially between teacher and students. They are giving instructions, sequencing, supervising, asking questions, replying to questions, expressing affective attitudes, and using social ritual.

Academic language is more complicated one to learn than social language. It needs special exposure since the use of it is depending on the context. Academic language is the language that is used by teachers and students for the purpose of acquiring new knowledge and skills (Chamot and O'Malley, 1994: 40). It has very specific purposes and the users must be able the functions of that language in the different content areas. It involves some functions, such as identifying and describing content information, explaining a process, analyzing and synthesizing concepts, justifying opinions, or evaluating knowledge.

In addition Baker (2001:169) states that academic language is the level of language required to understand academically demanding subject matter in a classroom. Such language is often abstract, without contextual supports such as gestures and the viewing of the subject.

This academic language also can not be separated with the use of terminologies related to the content area. The specialized language is a

vector of specialized knowledge, but sometimes it contains units from the common language (Coanca, 2011). The specialized languages are different from the common languages, regarding their usage and the information they convey. The communication of specialized information can take place within a small circle of specialists, or it can be addressed to the nonspecialists (popularization). It can be said that the specialized languages are different from the common languages regarding the usage and the information they convey. Cabre in Coanca (2011) finds a combination of different definitions of the specialized languages according to three stages:

1) "the specialized languages" are linguistic codes, which are different from the common language, consisting of rules and specific units. According to this aspect, a specialized language would, therefore, be an independent language; in this case, how can we perceive a clear barrier between the specialized language and the common language? We take into account that "linguistic phenomena" that differentiate the specialized language from the common one are very important to settle a barrier between them.

2) if a specialized language was a genuine specific code, it would be difficult for it to be understood by a non-specialist, because he does not know this code. But this aspect is not always valid.

3) furthermore, the popularization of the scientific discourse, to a smaller degree of specialization, which is understood by many speakers, is very useful nowadays.

Simply it can be said that specialized language is a language which uses specialized words of a particular area to convey it. It is usually used by the people, who are specialist in that particular area, for example some terminologies in doctor, engineer, tourism, etc.

Teaching content means teaching particular subject such as mathematics, science, social studies, and language arts. When teaching content has to use English which is not the country's native language as a medium of instruction, there are some elements to be paid attention.

There are at least four reasons for incorporating content into the ESL class (Chamot and O'Malley, 1994: 26). First, content provides students with an opportunity to develop important knowledge in different subject areas. This knowledge provides the foundation for learning grade-level information and processes in science, mathematics, social studies, and other academic areas of the curriculum. Second, students are able to practice the language functions ad skills needed to understand, discuss, read about and write about the concepts developed. The third reason is that many students exhibit greater motivation when they are learning content than when they are learning language only. Finally, content provides a context for teaching students learning strategies that can be applied in the grade-level classroom.

RESEARCH METHODS

The descriptive qualitative approach is used in this study. The data are taken from four different content teachers; mathematics teacher, physic teacher, biology teacher, and chemistry teacher. During the teaching and learning process, all of the teachers' talks are recorded then transcribed. The data are taken from the classroom setting. They are taken in the form of classroom recording. To manage the data, some techniques are involved to obtain the data. They are observation, recording, interview, and questionnaire. Interview and questionnaire are used as supporting data. The interview aims to conform to the accuracy of the impressions of what has been gained through observation and analysis of the recording. Therefore, it can be used to enrich the results of the study. While questionnaire is used to see the students' perception about the use of English employed by the content teachers in teaching content subject in bilingual classroom. It also aims as well as to conform to the accuracy of the data from the students' point of view. Here are the steps of analyzing the data which start from recording, transcribing, identifying data, classifying data, quantifying, concluding and giving suggestions.

FINDINGS AND DISCUSSIONS

Social Language Functions Used by Content Teachers

As its purpose to maintain social relationships between teachers and students which arerelated to the classroom management, here it is shown in the table below the distribution of social language function employed by four different content teachers.

Table 1. The Summary of Social Language Functions

Subject	Social Language Function							
	Giving Instruction	Sequencing	Supervising	Asking Question	Replying to Question	Affective Attitude	Social Ritual	Total
Mathematics	23	18	9	78	8	8	3	147
	16%	12%	6%	53%	5%	5%	2%	100%
Physics	18	7	8	78	24	1	3	139
	13%	5%	6%	56%	17%	1%	2%	100%
Chemistry	24	13	3	19	18	1	6	83
	29%	16%	4%	23%	22%	1%	7%	100%
Biology	6	0	3	5	6	0	2	22
	27%	0%	14%	23%	27%	0%	9%	100%
Total	**72**	**38**	**23**	**178**	**56**	**10**	**14**	**391**
	18%	**10%**	**6%**	**46%**	**14%**	**3%**	**4%**	**100%**

From the above table, it can be seen that 3 out of 4 content teachers have employed all kinds of social language function. It can be said that they have a good ability to manage the classroom.

The three social language functions mostly employed by mathematics teacher are 78 asking questions (53%), 23 giving instruction (16%), and 18 sequencing (12%). It means that the teacher in managing the classroom he more asks some questions to the students to check the students' comprehension related to the materials being taught. He also gives instruction to the students for the purpose of controlling students' behavior. Besides, he is also good in sequencing the lesson effectively and communicates this sequencing to the students.

The three social language functions mostly employed by physics teacher are 78 asking questions (56%), 24 replying to questions (17%), and 18 giving instruction (13%). Asking questions aims to check the students' comprehension of the lesson and stimulate the class conversation. The teacher also can give verbal confirmation to the students' replies and guide them to the correct reply. In addition, she also gives instruction to the students to control their behavior.

The three social language functions mostly employed by chemistry teacher are 24 giving instruction (29%), 19 asking question (23%), and 18 replying to question (22%). To manage the classroom, mostly the teacher gives instruction to control the students' behavior. Then, it is followed by asking and replying to questions which are done continuously.

The three social language functions mostly employed by biology teacher are 6 giving instruction (27%), 6 replying to question (27%), and 5 asking question (23%). It means that the teacher in the classroom more controls the students' behavior and replying to the students' questions or confirming to the students' replies. Then, it is followed with asking questions to check the students' comprehension towards the lesson.

Academic Language Functions Used by Content Teachers

The purpose of academic language function is to give and acquire new knowledge and skills to

the students which contains seeking information, informing, comparing, ordering, classifying, analyzing, inferring, justifying and persuading, solving problems, synthesizing, and evaluating. In teaching content subjects, a teacher should consider all of those functions because it can deepen the students' comprehension about the material. The table 2 shows the summary of the academic language function distribution by mathematics and science teachers.

From the table, it can be seen that all of the teachers have not used all academic language functions yet in their teaching and learning process. The mathematics teacher has used 10 out of 11 kinds of academic language (91%) by leaving classifying. The physics has made use 10 out of 11kinds of academic language (91%) by leaving comparing.

The chemistry teacher has used 10 out of 11 kinds of academic language (91%) by leaving analyzing. The last, biology teacher has employed 6 out of 11 kinds of academic language function (55%) by leaving comparing, inferring, justifying and persuading, and synthesizing.

Table 2. The Summary of Academic Language Functions

Subject	Academic Language Function											
	Seeking Information	Informing	Comparing	Ordering	Classifying	Analyzing	Inferring	Justifying and Persuading	Solving Problem	Synthesizing	Evaluating	Total
Mathematics	47	64	2	10	0	2	18	18	23	28	12	224
	21%	29%	1%	4%	0%	1%	8%	8%	10%	13%	5%	100%
Physics	27	60	0	9	1	16	9	13	12	7	20	174
	16%	34%	0%	5%	1%	9%	5%	7%	7%	4%	11%	100%
Chemistry	13	31	1	3	4	0	3	4	1	3	9	72
	18%	43%	1%	4%	6%	0%	4%	6%	1%	4%	13%	100%
Biology	6	22	0	2	6	1	0	0	0	0	3	40
	15%	55%	0%	5%	15%	3%	0%	0%	0%	0%	8%	100%
Subtotal	**93**	**177**	**3**	**24**	**11**	**19**	**30**	**35**	**36**	**38**	**44**	**510**
	18%	**35%**	**1%**	**5%**	**2%**	**4%**	**6%**	**7%**	**7%**	**7%**	**9%**	**100%**

All of the teachers employed informing as the academic language function which is mostly used among the other functions. It indicates that the teachers give input to the students done through reporting, lecturing, or describing materials to the students.

The Problems Faced by the Content Teachers in Teaching Content Subjects

Content teachers are important resources for modeling in the classroom. Content specialist teachers have extensive knowledge about their subject areas and are also experienced in effective way of presenting content-specific material. In addition, the content teacher knows what prior language and skills are needed before introducing particular topics. When presenting and explaining new information, teachers should use appropriate technical words and grammatical structures, if necessary providing paraphrases, definitions, and examples to clarify meanings. Besides, the collaboration with the same grade-level teachers is also important to gain some advices or another suggestion that can improve the quality of teaching. From the interview and transcript analysis result, it was shown the problem that the content teachers face when using English as a medium of instruction in content subjects.

The content teachers consider that teaching content subjects in English as its medium of instruction is not a simple case. English as a medium of instruction which is conveyed more than 75% of the whole time in the classroom sometimes makes problem to the teachers. Though the teachers have very good competence in mastering the content material, but when they have to deliver it in English, it may become a problem. This problem may appear because of the teacher background itself in which the teachers do not come from English language even though some of them have taken some English short courses. It influences their performance. Some of teachers are not confident in using English as the medium of instruction because of the lack ability on it. From the interview, vocabulary mastery is the first reason that challenges the teachers in teaching content subjects in English. It is because the technical vocabularies are different with daily vocabulary which only can be found in content subject dictionaries. Therefore, translation is the best way to cope with this reason for some teachers particularly when the students do not understand what is being taught. Besides, code-switching also becomes a good alternative. The teacher switches the codes to Indonesian or vice versa when they do not know what they want to convey in English and absolutely for the main reason to make students easier to understand.

The lack of vocabulary also makes the teacher goes around the bush only to convey what he means. By giving simple vocabularies or changing the words in English, it can be a strategy to cope with the problem. Even, the use of visual aids also can help it.

The other problem faced by the content teacher in using English is grammar. It is problematic also to most of the teacher. Some of them consider that grammar can be inhibiting factor to speak in English. That is why they ignore them some times because they consider if they focus only on grammar, they will not speak in English. The most important thing is that the students understand what they are saying. But actually the case is that it can make the students' confused sometimes.

The last problem faced by the content teacher in using English is pronunciation. There are so many mistakes done by the teachers in pronouncing the words. It gets back to the reason that they do not take English language study before. No wonder if they often mispronounce some words. To see the details of the problems faced by the teachers when they teach content subjects using English, the following subchapters describe briefly about it.

CONCLUSION

The content teachers' way of using social and academic language function is different among others. The use of social and academic language function supports each other. The social language function supports in maintaining the social relationship among the students and the teacher as well as the plot of the teacher and learning process. Meanwhile, the academic language function supports in giving the materials to the students including how to solve it, how to evaluate it, how to justify it and so on in which the main purpose is to give new knowledge and skill related to the content

material.The result of this study reveals that the problems faced by the teacher in using English to teach content subjects are related to the grammar,vocabulary mastery, and pronunciation which are overcome by using paraphrasing, visual aid, or switching codes even translating into Indonesian.By seeing a great motivation and positive responses from the students towards the use of English as a medium of instruction in content subjects, it can be a great motivation also for the content teachers to improve their English ability. In doing so, practice of using social and academic language functions should be explored more in the bilingual even full-English content classroom.

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