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LEARNING THE LANGUAGE OR THE SUBSTANCE?: A CASE IN RESEARCH STATISTICS COURSE

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Abstract: As one of content courses in English study program in Indonesia, Research Statistics has double functions. It is the course from which students can dig up substantive knowledge concerning statistics.Through this course, students learn concepts and skills related to statistical concepts and how to apply them in numerical data analysis. Besides, using the course, students can learn and practice how to use the target language both passively and actively, because the curriculum recommends that courses in an English study program are fully presented in English. The main problem figuring in this case is prioritizing which one should be weighted in favor of another. Statistical concepts such as *central tendency, standard deviation, critical region, level of significance,* and many others are not quite easy for students of language department. Fully using English as the medium of instruction as suggested by the curriculum might hamper students to comprehend the statistical concepts. In consequence, comprehensive understanding towards the statistical concepts cannot be reached. The solution for such a problem is the use of the students' mother tongue. It, however, does not facilitate students to maximally learn the target language. Whichever option we choose there will be advantages and disadvantages.

Key words: statistics, English, content course

Background

Curriculum of English study program in Indonesia requires that English is used as the medium of instruction. With the exception of general course or *Matakuliah Dasar Umum (MKDU),* courses in English study program are delivered in English. The rationale behind the regulation is that the use of English in almost all courses might push learners to learn the target language in real situation both actively and passively. Through content courses such as research, linguistics, literature, TEFL, and many others learners learn doubly: learning the substance of each discipline and learning how to use English in the discipline. As such, content courses are used as the means of learning the target language. Relying on this, the teaching of content courses in English study program in Indonesia can be included into content-based instruction (CBI), that is a mode of teaching that prioritizes the learning of content over language (Warrington, 2008). Crandall and Tucker define CBI as an approach to language instruction that integrates the presentation of topics or tasks from subject matter classes (e.g., math, social studies) within the context of teaching a second or foreign language (in Suharso, 2008: 97). Crandall et al as quoted by Suharso mention that there are two types of CBI: content-driven model and language-driven model (2008: 98-99). The former focuses on the content mastery, and the latter emphasizes that language is weighted in favor of the content.

Research Statistics (RS) is one example of a course taught using CBI. The curriculum of English study program in colleges and universities in Indonesia, including the one in State Islamic Institute of Tulungagung (SIIT) requires statistics as one of compulsory courses. This decision is under the consideration that statistical concepts and skills are used in almost all fields of human endeavor. In education research, for example, a researcher needs to be able to collect data concerning students' achievement, and how to summarize those numeric data in order to be ready to be analyzed. As the data are organized, the researcher needs to analyze them using an appropriate statistical formula, from which a conclusion can be drawn.

In general, statistics is concerned with numerical data so many people consider that statistics is identical with mathematics. Cobb and Moore, cited in Bond et al (2012) mention that statistics is more than mathematical activities. Bluman defines statistics as the science of conducting studies to collect, organize, summarize, analyze, and draw conslusions from data (1998: 3). Relying on this, it can be deduced that learning statistics is not merely learning how to calculate numerical data, but it involves understanding some aspects in research such as data collection methods, data presentation, and conclusion drawing. In addition, learning statistics also deals with learning computer program since the data analysis using statistical formula can be completed through a computer program such as SPSS. In regard to the complexity of statistics, DeVeaux and Velleman note that the challenge in teaching statistics is that we have a wide variety of skills to teach, and most of them require judgment in addition to mathematical population (in Bond et al, 201). The complexity of statistics appears to rise when a foreign language such as English is used as the medium of instruction.

This short writing tries to present some difficulties figuring in the teaching and learning of RS in SIIT. It proceeds from the difficulties faced by learners, and is followed by the ones encountered by the teacher. Suggestions for the improvement of the teaching and learning close this writing.

METHODS

This is a basic qualitative research. It is the one intended to understand a phenomenon, a process, or a particular point of view from the perspective of those involved (Ary et al, 2010: 453). In the context of this research, it was aimed at describing the teacher's and students' difficulties figuring in the teaching of Research Statistics in the English study program of SIIT. Data of this study are the verbal description concerning the students' and the teachers' difficulties in the teaching and learning of RS. The data of this study were obtained by observation. Participant observation was applied in this study since the researcher is the teacher herself. Data of this study were analyzed by making classification of difficulties encountered by students and the teacher.

FINDINGS AND DISCUSSION

English in Research Statistics Course

As touched on earlier, Research Statistics (RS) is one of compulsory courses in State Islamic Institute of Tulungagung, East Java, Indonesia. This two-credit course is to equip the fifth-semester students knowledge and skills related to statistics.

The first finding worth presented here is the means of instruction in RS. As suggested by the curriculum, the language used in English study program is English. As such, statistical concepts and skills to apply them are presented in English. The use of English fully in the teaching and learning of RS appears to be problematic. Statistical concepts such as *central tendency, standard deviation, critical region, normality, hypothesis testing,* and many others are not quite easy for students of language department. The use of English fully as the medium of instruction as suggested by the curriculum hamper students to comprehend those concepts, so that the comprehensive understanding towards the statistical concepts cannot be reached. The survey that I conducted in the middle of 2014 revealed that out of 134 students, 91% of them confirmed that statistics gets more difficult because of the language. The solution for such a problem is the use of two languages at once: English and the mother tongue. The use of bilingual, however, does not facilitate students to maximally learn the target language.

In connection with which one should be weighed in favor of another—either the target language or the content—the problem appears in the evaluation as well. Answering RS test items, students frequently misspell English terms. Instead of writing *discrete,* some of them write *diskrit*. They commonly write *intack* for *intact, signifikan* for *significant, hipotesis* for *hypothesis,* and many others. Correcting such a 'style' of spelling, I am in a dilemma which one should be the priority: the language or the substance. Reading my students' hand writing saying *intack,* my mind is geared towards the word *intact* because those two words are quite similar. Relying on this, I predict my students' intention. What he/she would like to say is *intact,* not other. Thus, if the focus of the test is the substance, the misspell is tolerable. If the tolerance of small mistakes keeps continuing, students will accept the wrong thing as the truth. *Intakt, diskrit, signifikan, hipotesis,* and any other mistakes will be accepted as the standardized terms. The implication of this is that their accuracy in the use of the target language is not improved. On the contrary, if the main focus is the language, it ignores their comprehension towards the learned concepts.

The juxtaposition between the mother tongue and English and the tolerance on linguistic mistakes presented earlier confirm that content-driven model of CBI is the one implemented in the teaching of RS. In such a teaching mode, the main objective is the mastery towards the content course. In consequence, the syllabus is developed on the basis of topics in the content course. On the contrary, the mastery of the target language is of secondary importance. In other words, it is a strong form of CBI (Wesche & Skehan, 2002). This choice is due to the curriculum; it explicitly states that by the end of the course students are expected to be able to understand statistical concepts and apply statistical skills in dealing with quantitative data

analysis in their undergraduate thesis. Given the high demand, it is reasonable to weigh the content-driven model over the language-driven one.

Turning to the students' linguistic difficulties presented earlier, it might be because of the position of English in Indonesia. As a foreign language, English is taught in schools in Indonesia. It, however, does not play an essential role in national or social life. English atmosphere can be found merely in English lessons at schools. Most people in Indonesia do not need English in their daily life. In consequence, Indonesian EFL learners are no accustomed to using English in settings other than English language learning. Learning RS is one example of learning setting other than English setting. In it, communication is stimulated by the desire to comprehend the substance of the course. In order for fluent discussion and communication about the substance of the course to take place, advanced language proficiency is called for. Advanced language proficiency enables language users to use the target language without any obstacles. As such, speakers concentrate merely on the substance of the course. As a matter of fact, not Indonesian EFL learners have attained the advanced level of English proficiency. In consequence, communicating fully in English, let alone in a course other than English lesson, is hardship. It might explain why students learning RS needs to have bilingual in their RS class.

Teacher's Academic Constraints in Research Statistics Course

RS is a statistics course intended to equip students to analyze quantitative data in their undergraduate thesis. As an English-study-program teacher, I do not have formal education background related to statistics. Without additional in-service training in statistics, comprehending statistical concepts is a hardship. Statistics is a broad subject. It deals at least with three disciplines: research, mathematics, and computer. Statistics is not separable from research since it is related with some aspects of research such as methods of data collection, data organization, data presentation, data analysis, and conclusion drawing. Statistics is very close to mathematics since it deals with logic, numbers, and quantity. Statistics, particularly the one in English study program, cannot be separated from one of computer program: SPSS. The quantification and the calculation of numbers should not be done manually, but rather they can be completed through the SPSS program.

The availability of teaching materials is the next problem that I have to eliminate. RS is a statistics course provided for English-study-program students. As such, the statistical concepts such as central tendency, standard deviation, critical region, level of significance, and others need to be adapted with the students' needs. It means that such concepts should be applied in the context of English teaching and learning. Teaching materials using the context of English education is very limited. The available statistics books are pure statistics or statistics for mathematics or other science disciplines. In consequence, under the supervision of specialists, I try to develop teaching materials for my own.

With the responsibility to teach such a perplexed course, I try to constantly have consultation with colleagues who are more knowledgeable about statistics and computer. Involving specialist might raise my comprehensibility towards statistics, and it facilitates the process of

teaching material development. Despite its effectiveness, it requires a considerable amount of time and energy.

What can be learnt from these findings is that the inter-faculty collaboration is called for. The other problem arises in this matter is that Indonesian specialists of research, statistics, and computer do not speak English, and they lack sufficient experience in teaching a content-based course. In consequence, I need to fend for myself to integrate between statistics and English.

CONCLUSION AND SUGGESTION

In sum, this writing attempts to reveal some difficulties figuring in RS, one of the courses taught using CBI. The first difficulty is concerned with the choice of the priority: the subject matter mastery or the language mastery. The second obstacle in implementing this mode of teaching deals with the teacher's comprehensibility towards the discipline and the availability of the teaching materials. On the basis of the difficulties found in the field, it can be concluded that CBI in the EFL context is problematic. Fully using English as the medium of instruction as suggested by the curriculum might hamper students to comprehend the statistical concepts. In consequence, comprehensive understanding towards the statistical concepts cannot be reached. The solution for such a problem is the use of the students' mother tongue. It, however, does not facilitate students to maximally learn the target language. Whichever option we choose there will be advantages and disadvantages.

Two suggestions for the improvement are relevant to be made. *First,* inter-department collaboration is good for eliminating the teacher's obstacles. Such collaboration might lighten the teacher's burden of raising his/her comprehensibility towards the subject matters of the content course and developing teaching materials. *Second,* there should be regular assessment on the students' language proficiency and their background knowledge about statistics.

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