

学位論文の要旨 (論文の内容の要旨)  
Summary of the Dissertation (Summary of Dissertation Contents)

論 文 題 目

Dissertation title Primary Science Education In Two Languages, Bicol and Filipino:  
The Case of Bicol Speaking Students in the Bicol Region, Philippines

広島大学大学院国際協力研究科

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Hiroshima University

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Cultural and Regional Studies

学生番号

Student ID No. D105801

氏 名

Name JUALIM DATILES VELA

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The study aimed to analyze the effects of using two languages, Bicol and Filipino on Bicol-speaking primary students' understanding of science ideas. The study also focused on soliciting students' language preference in learning science, and teachers' perceptions on language use in science education.

The study was guided by the following process:

*First*, the language demography of the country and the language policies implemented thru the constitution and the department of education orders were reviewed. Studies conducted in the regions which are related to mother language-based education were researched. *Second*, the researcher conducted school visits to public primary schools located in the provinces of the Region 5 or Bicol region. School principals and teachers were interviewed, and science classes were observed focusing on the language use. *Third*, based on the insights gained, the research objectives, design and framework of the study was formulated and research materials were developed. *Fourth*, the research materials were administered to selected student and teacher respondents, afterwards, the data were collected and analyzed.

The study aimed to address the main research problem: "Do Bicol-speaking primary students understand science ideas better in Bicol or Filipino, compared to English?"

In order to arrive at the suitable answer, the following specific research questions were considered:

1. What are the effects of using two languages, Bicol and Filipino, on students' academic performance in science compared to using the language of instruction in science? In which language do students understand better?
2. What are the students' language preference in learning science ideas, and their language environment in and out of their homes and school?
3. What are the perceptions of elementary school teachers towards the mother language-based science education?

The descriptive methodology was employed during the process of this study. Instruments that were used in the research included survey questionnaires and actual classroom lesson, reading comprehension and vocabulary tests in three languages. The survey questionnaires served as data to find out the students' language preference in learning science ideas in science related activities. Actual classroom lessons provides data on students' performance (recitations, class participation, expression of own ideas, following teacher's instructions) in class. The tests in three languages consisted of a reading material about the science topic from the lessons taught, and test items that determine if the students understood what they have been taught.

The findings revealed the following:

1. Students who were taught using the Filipino language obtained better mean scores in the test compared to students who were taught using their mother language. On the other hand, students who were taught using the English language obtained the lowest mean scores. Furthermore, the results revealed that students prefer the Filipino language during class discussions, recitations, in following their teacher's instructions during science related classroom activities, and in doing their homework.
2. Students who were taught using the Filipino and Bicol languages exhibited easiness and eagerness to participate and follow teachers' instruction during science classes. Students were also able to express their own ideas during class recitations and discussions compared to the students who were taught in English.
3. The results of the tests in which student respondents obtained better scores in Filipino was supported by the results of the survey administered to them. The results revealed that majority respondents prefer the Filipino language in learning and comprehending science concepts, in expressing their own ideas, and in following their teacher's instructions.
4. The results also revealed that from teachers' point of view, the Filipino language, even though not the mother language of the students in the region, is the language preferred by students in most science related activities along with the Bicol language. On the other hand, although their students favor the Filipino language in various science related activities, for several reasons (e.g. the difficulty and cost of translating science concept into local languages, the status of English as the international language, the importance of English for higher education, lack of training in multilingual-based teaching), a considerable number of teacher respondents still perceive that English is the best medium (most appropriate) of instruction for primary science education in the Bicol region.

Several insights were gained from the data of this study. First, the Bicol speaking primary students switch languages between home and school, which could affect their learning. Second, the results of the test revealed that Bicol speaking students have demonstrated better performance when they were taught in the Filipino and Bicol languages. The findings are supported by several studies (Dekker and Dumatog, 2003; Balce, 2010; Oyzon et al., 2012), which similarly resulted to better performance of students in their mother language. Third, the use of local languages in teaching science at the moment would depend on the content being taught. Fourth, the results of the study show that the use of two Philippine languages, Filipino and Bicol, in the primary science level could benefit the Bicol-speaking students in terms of better understanding of science ideas.

Lastly, although Bicol is the mother language of the student participants, they performed better in the test in

Filipino language, which is the national language and a language widely spoken in another region. This indicates that at this time, the Filipino language has a stronger foundation as an academic language than Bicol since the Filipino language is also the language of instruction in subjects such as Social Studies, and Filipino. In addition to Filipino being spoken, written and used as medium of instruction, it is also used in school textbooks, magazines and newspapers.

Based on the findings in this study, it is concluded that, grade 3 Bicol-speaking understand science ideas from science lessons and other science related activities better in Filipino and in Bicol language, compared to the English language.

Most importantly, the results of this study revealed that the Bicol speaking students were conditioned to the Filipino language that they became familiar and comfortable using the language. Therefore, if the learners are highly exposed to other language in spite of existing mother language, this may affect the language preference of the students in the learning process in the classroom.

Thus, the study recommended further research on mother language-based science education by developing more instructional lessons and materials to various thematic content of the science curriculum to determine whether the use of local languages is appropriate to the lesson being taught. Further research on finding and developing equivalent or near equivalent meanings or definitions of science terms in the local languages. And, providing more opportunities for teachers as well as school administrators to develop school-based instructional materials for science education using local languages that students are familiar.

備考 論文の要旨はA4判用紙を使用し、4,000字以内とする。ただし、英文の場合は1,500語以内とする。

Remark: The summary of the dissertation should be written on A4-size pages and should not exceed 4,000 Japanese characters. When written in English, it should not exceed 1,500 words.