The Use of Trilingual Instruction by Teachers on Different Instructional Phases in Selected Mathematics Classes in Central Philippines

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Abstract

This research sought to determine the extent of use of trilingual instruction: English (international language), Filipino (national language), and Hiligaynon (lingua franca) in Iloilo by Teachers in selected Mathematics classes in Iloilo City located in the central part of the Philippines. Specifically, it sought to determine the following: 1) the classroom activity areas in which teachers use English, Filipino, and Lingua Franca; 2) the extent of language mixing by teachers and their reasons for the use of language "mix" and 3) the language preferred as medium on instruction.

The research involved two public schools in Iloilo City representing DepEd-operated school and Chartered school. In each school, three classes were identified representing sections 1, 2, and 3, with an average class size of forty (40). A total of six (6) teachers were involved.

Three research instruments were employed a survey questionnaire, audio-recordings of classroom verbal interaction, and observation checklist. The survey questionnaire included an attitudinal scale, a difficulty scale, and open ended questions.

Results showed that in terms of sentences uttered, pure English still accounts for the highest number of utterances by teachers. Language mixing was minimal for the teachers. No pure Filipino sentences were uttered by teachers. This is evident because teachers were Hiligaynon speaking. In all the mathematics classes observed, the sequence of activities was almost the same. Teachers believed that the students were more effective in explaining using a mix of languages. Likewise, teachers admitted they are more effective when they used mixed language in teaching Mathematics.

Keywords: mathematics, lingua franca, language mix

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Introduction

All of us have a native language (mother tongue) learned from childhood through which we interact with kinsfolk and the community. Most of us in the Philippines also speak a regional language, also called lingua franca such as Ilocano in Northern Luzon, Cebuano and Hiligaynon in parts of the Visayas and Mindanao, and Tagalog in Central Luzon. Apart from this, most Filipinos speak the national language, which is widely used in centers of population throughout the islands. Many Filipinos can speak English, although the skill of using this language vary. Language has a vital role in the teaching-learning process. Studies show that language affects not only the cognitive and affective faculties of man and his environment, but his behavior as well (Gardner, 1975; O'Malley, J.M. & Chamot, A.J., 1990; Clark, E.V., 2004).

Statement of Purpose

This research sought to analyze the extent of use of English, Filipino and *lingua franca* by teachers in selected high school mathematics classes. Specifically, it aimed to answer the following questions:
 1. What is the extent of the use of English, Filipino and *lingua franca* in mathematics classes by teachers?
 2. What is the extent of the use of English, Filipino and lingua *franca* in specific activity areas in mathematics classes?
 3. What is the extent to which teachers use language "mix" in mathematics classes?
 4. What language(s) do teachers prefer as medium of instruction in high school mathematics?

Research Objectives

This research study sought to determine the extent of use of English, Filipino, and *lingua franca* (which is *Hiligaynon* in Iloilo) by teachers in selected mathematics classes in Iloilo City.
Specifically, it sought to determine the following:
1) the extent of teachers' use of English, Filipino, and the *lingua franca* in the various areas of instruction;
2) the extent of language mixing by teachers in the classroom instruction;
3) the language preferred as medium of instruction in mathematics

Methodology

This is a qualitative study of the use of language in mathematics classrooms which employed the documentation and analysis of classroom verbal behavior of teachers, particularly in the use of English, Filipino and the *lingua franca,* and language mix. It also employed a survey questionnaire to generate information on the teachers' attitude and preferences for the use of language.

The Context and Respondents

The research was undertaken in two public schools in Iloilo City representing DepEd-operated schools and Chartered schools. Three first year classes from each school with an average class size of forty (40), were involved in the study. The total number of students was 263. Six (6) teachers were involved, each one teaching a class. The classes in the Chartered school had Section 1 as a homogenous high-ability class while the 2 other sections were heterogeneous lower- ability sections. The classes in the DepEd-operated school were homogenous wherein Section 1 was the high-ability

group and sections 2 and 3 were low ability groups. Three observations were undertaken in each class, making a total of 18

Subjects
Table I
Number of Respondents and Observations

Schools	No. of Classes (Students)	No. of Teachers	No. of Class Observations
Chartered School	3 (120)	3	9
DepEd-operated school	3 (143)	3	9
Total	6 (263)	6	18

B. Instrumentation
The instruments for gathering and organizing the data were formulated specifically for this research: a survey questionnaire of attitude and preferences for the use of language in teaching, an audio-recorder to record the classroom verbal interactions, and observation checklist.

The Survey Questionnaire
The survey questionnaire had 2 parts designed to elicit information from the respondents. Part I dealt with personal background information about respondents. Part II included specific items which called for attitudes or preferences measured using a 5-point Likert type scale to determine degrees of attitude or preference. The scale used was: E (extreme difficulty), M (much difficulty), A (average difficult), L (little difficulty), N (no difficulty at all). An open-ended question was asked at the end of the questionnaire to elicit information about language use and preferences.

Audio-Recording
An audio-recorder was used to record the classroom verbal behavior to capture teachers' language use in the classroom. Tally sheets were prepared for use to record the frequencies of teachers' statements using the different languages. A list of activity areas in each phase of the instructional period was prepared to serve as guide for organizing the data.

Phases of instruction
1. Review of previous lesson
2. Motivation
3. Presentation:
a. Lecture/ Explanation
b. Modeling/ Giving illustrative example
c. Discussion/ Question -answer
4. Skill Development: Exercise/drill

5. Application
6. Evaluation: Testing
7. Giving assignments
8. Other activities (e.g. classroom management)

Data Gathering

Audio-recording
Audio-recording of classroom verbal behavior was undertaken unobtrusively to document the use of English, Filipino and Hiligaynon in the classroom interactions between teacher and students. Three observations were made of each class, with each observation covering a whole period of 60 minutes. A total of 18 classroom sessions was recorded. Transcriptions of the audio-tapes were analyzed. Then, statements were marked according to the language used; that is whether the statements were in English, Filipino, *lingua franca* or a language "mix". Statements using *lingua franca* were *classified as* Hiligaynon, Kinaray-a or Akeanon which were the common languages spoken in Iloilo. After the statements have been marked, they were tallied and the total frequency count for each language was summarized. Percentages of language use and language "mix" were derived. Patterns in the use of language were analyzed and generalizations were made to determine the extent of language use by both teachers and students.

The percentage of sentences uttered in a certain language was obtained using the formula:

$$\text{Percentage of SU in the language} = \frac{\text{Total N of SU in the Language}}{\text{Total N of SU}} \times 100$$

where:
 SU – means sentences uttered;
Language – refers to either English, Filipino, Hiligaynon, or "Mix" of language use

Characteristics of the Teacher Respondents
There were 4 female teachers, and 2 male teachers, reflecting the national trend of female to male ratio of teachers. Age range of teachers was 25-50 years of age. Average number of years teaching experience was 11 years. Four of the teacher respondents reported they spoke English well and 2 reported, moderately well.

Results of Survey on Language Use Preferences
1. Three teachers from the Chartered school responded that "English" was preferred in teaching mathematics.
2. The other three from the DepEd operated school responded "language mix" as preferred but one teacher stated that English should be used in higher ability sections and mixed language in the lower ability sections.
3. All 6 teachers responded that students in higher ability classes preferred the use of English in mathematics.
4. All 6 Teachers responded "Undecided" to the question on what language is best for teaching mathematics.

Results of the Open Ended Questions
All 6 teachers in both schools stated that the students using a mix of languages were more effective in giving explanations. All 6 teachers expressed they were more effective when they used mixed language in teaching mathematics

Results of Tape Recorded Observations
1. In all the mathematics classes observed, the sequence of activities was almost the same.
2. Both English and *lingua franca* were used in the observed classes.
3. The *lingua franca* used was Hiligaynon. *(Kinaray-a* and *Akeanon* were not used in any of the sentences uttered by teachers.)
4. A mix of English and Hiligaynon was evident in the lecture / explanation phase of instruction.
5. Teachers of low ability classes in both schools used Hiligaynon more in making explanations.
6. Filipino was not used in any of the sentences uttered by teachers.

EXTENT OF USE OF LANGUAGES BY TEACHERS

School	T o t a l	
Chartered	N	%
1	678	16.32
2	703	16.20
3	715	17.21
TOTAL	2096	50.45
DepEd Operated		
1	641	15.43
2	665	16.00
3	753	18.12
TOTAL	2059	49.55
GRAND TOTAL	4155	100.00

COMPARATIVE PERCENT OF USE OF LANGUAGES BY TEACHERS PER ACTIVITY AREA

ACTIVITY AREA	Language Used				GRAND TOTAL
	English %	Hiligaynon %	Mix %	Filipino %	N %
1. Review of previous lesson	93 2.24	11 0.26	7 0.17	0 0	111 2.67
2. Motivation	187 4.50	9 0.22	5 0.12	0 0	201 4.84
3. Presentation: Lecture / Explanation	240 5.78	38 0.91	30 0.72	0 0	308 7.41

4. Modelling / Giving Illustrative Example	228 5.49	1,267 30.35	78 1.88	0 0	1,567 37.71
5. Discussion / Question-Answer	345 8.30	93 2.24	90 2.17	0 0	528 12.71
6. Skill development: Exercises / Drill	341 8.21	60 1.44	61 1.47	0 0	462 11.12
7. Application	67 1.61	13 0.31	9 0.22	0 0	89 2.14
8. Evaluation / Testing	543 13.07	78 1.88	42 1.01	0 0	663 15.96
9. Giving Assignments	53 1.28	8 0.19	3 0.07	0 0	64 1.54
10. Other Activities	83 1.99	67 1.61	12 0.29	0 0	162 3.90
T O T A L	2,180 52.47	1,638 39.42	337 8.11	0 0	4,155 100

Conclusions

1. Results showed that in terms of sentences uttered, language mix (English and Hiligaynon) was extensively used by teachers in both DepEd operated and Chartered schools.
2. The extent of use of Hiligaynon was also dominant in the DepEd operated school compared to the Chartered school where English was used more than Hiligaynon. Filipino was not at all used in all classrooms.
3. A mix of English and Hiligaynon was more evident in giving lectures and making explanations, as well as in modeling and making illustrations.
4. Teachers were undecided on the language best used in teaching mathematics. They perceive a mix of English and Lingua Franca to be the best medium for teaching mathematics.

Recommendations

1. Qualitative research on mathematics teaching should be conducted for a longer time in order to obtain a more comprehensive picture of the use of language in mathematics classroom teaching.
2. A documentation of verbal behavior in mathematics classes should be undertaken to for an extensive period of time to be able to generate more conclusive data.
3. Studies on the effects of the use of vernacular in mathematics classes should be undertaken to provide basis for policy making with regard to the use of language in the teaching of mathematics.
4. Studies should be conducted on the relationship between the extent of use of lingua franca and the students' performance, as measured by their grades in mathematics classes. Such studies will be useful basis for writing learning modules.

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