The Utilization of Mother Tongue in Teaching Young Learners: Its Implications to Pre-Service Teachers

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Abstract
This study ascertained the implications of the utilization of mother tongue as a medium of instruction to the pre-service teachers in teaching mathematics and science to Grade 3 learners. The study was conducted at Bukidnon State University Elementary Laboratory School during the SY 2014-2015. It utilized the descriptive method. The result revealed that learners performed well when the medium of instruction used in teaching science and mathematics was English. Therefore, Grade 3 learners achieved high score in Science and Mathematics subjects when they are taught using the English language as the medium of instruction. This result implies that English language is the preferred medium of instruction of the Grade 3 learners and that in-service teachers should encourage the pre-service teachers to utilize English as the medium of instruction when teaching science and mathematics to young learners, or should also consider the language of the learners when they teach these tool subjects during their practice teaching.

Keywords: Mother tongue; pre-service teachers; science and mathematics subjects

Introduction
Use of the appropriate language in teaching learners greatly contributes to academic performance and success in school. Language plays a vital role in the learning process of the elementary learners. Teachers must ensure that the language to be used in the different subject areas are the language first heard at home (Benson, 2004). In relation to DepEd Order No.16, s. 2012 which provides the guidelines on the nationwide implementation of Mother Tongue-Based Multilingual Education (MTB-MLE) that started last school year 2012-2013, elementary schools nationwide were prompted to adopt such a system. As stipulated in the guidelines, the MTBE shall be implemented in all public schools, specifically in Kindergarten, Grades 1, 2, and 3 as part of the K-12 Basic Education Program.

Mother Tongue refers to the first language (FL), home language, native language or vernacular used by every individual at home. Mother Tongue-based Instruction (MTBI) refers to the language spoken by the pupils in their homes and used as a medium of instruction in school. The utilization of this medium is one of the effective interventions of DepEd which aimed at improving the quality of Philippine education to better prepare individuals to live a successful life.
after school. It also provides an opportunity for the children to exercise their right to learn in their first language. The MTB-MLE shall be implemented in two (2) modes: as a learning/subject area and as medium of instruction. The Mother Tongue (MT) as a subject focuses on the development of beginning reading, and fluency from Grades 1 to 3. The learners’ Mother Tongue (L1) shall be used as the medium of instruction (MOI) in all domains/learning areas from Kindergarten through Grade 3 except Filipino (L2) and English (L3). In other word, this will be used in the subjects namely: Mathematics, Araling Panlipunan, Music, Art, Physical Education and Health or MAPEH and Edukasyon sa Pagpapakatao from Grades 1 to 2. The L1 or the Mother Tongue will continuously be used as medium of instruction in the transition or bridging process through Grade 3 with the addition of the Science subject.

Further, the program aims to develop the following areas: language development, which establishes a strong education for success in school and lifelong learning; cognitive development, which focuses on Higher Order Thinking Skills; and academic development of the learners which prepares them to acquire mastery of competencies in each of the areas.

Moreover, Gonzales, (1996) stressed that the parents, and the community positively approved the idea of utilizing the children’s Mother Tongue to be used in school in their preliminary years. He emphasized that this will improve children’s self-concept and identity. Children’s home culture and traditional knowledge will also be validated and reinforced. Children gain a better self-concept and have a strong sense of their own identity. Such children usually achieve better in school and in life than children who are forced to learn in an unknown, strange language (Ball, 2010).

At Bukidnon State University Elementary Laboratory School (BukSU-ELS), only few percentage of the learners are noted to be Cebuano speakers which is the native or first language of the locality. The learners preferred to use English when they speak and communicate with their peers, classmates, and teachers. They use English language at home and can communicate effectively using this language. Most of these learners were enrolled in private pre-schools or international schools during their formative and senior kindergarten years, which used English as the medium of instruction.

In addition, these learners come from families having modern facilities at home like the Internet and cable networks. This is the reason why teachers from Grades 1 to 3 of ELS have to use the English language when reciting subjects in Mathematics, Science, and Music, Art, Physical Education and Health or MAPEH. The elementary laboratory school exists as the practicing ground of the students enrolled in the College of Education of the university. It is in the laboratory school where they are deployed for their field study and on-campus teaching assignment. Pre-Service teachers perform their teaching tasks for about ten weeks to be honed with the necessary teaching skills in the laboratory school before being deployed by the Department of Education (DepED) for their off-campus teaching assignment.

Thus, the purpose of this study is to further determine the implications of the utilization of Mother Tongue as a medium of instruction by the pre-service teachers in teaching science and mathematics to young learners, specifically Grade 3 learners.

This study seeks to provide pre-service teachers with base line data of the performance of young learners when taught using the mother tongue as the medium of instruction in one class and the use of English in another class. This is specifically done in two subjects - Mathematics and Science - of Grade 3 pupils. It is claimed that the use of English in cases where Cebuano is not the L1 improves academic performance.

In science education, the communication of science concepts demands linguistic and conceptual knowledge. Therefore, both
teachers and students should communicate in English, the language which they used in expressing their ideas. Most of the science process skills (or thinking skills) are linguistic. For example: communicating, classifying, inferring, predicting, interpreting data, hypothesizing, defining operationally, and investigating. Most science concepts are understood, expressed, and discussed through them. These science process skills or thinking skills cannot be sharpened unless one uses his or her mother tongue. If Filipino children will keep on using a foreign language to understand science concepts, then, they can only be at the low level of cognition (factual knowledge) in Science—not at the high levels of cognition (conceptual understanding and reasoning and analysis), (Kintanar, 1983).

The repeated dismal performance of Filipino students in the Trends in International Mathematics and Science Study (TIMSS) should be a strong wake up call for science educators to change the framework of the current Basic Education Curriculum for Science and Health. Science educators should bear in mind that top performers in Science and Math are Chinese Taipei, Hong Kong SAR, and Republic of Korea, countries which use their mother tongue in Science teaching. At present, Science and Health, a school subject which calls for linguistic skills in communication (verbal, written, and graphic), is still taught in English. With this teaching strategy, young minds will not be trained and sharpened to think and express their ideas; more so to understand complex science ideas.

Nolasco (2012), a proponent of MTB-MLE presented that the basic curriculum shall be adapted locally to the language and culture of Filipino learners including community values, to aid teachers in planning their lessons. This principle hews closely to DepEd’s newly formulated policy framework for indigenous people who integrate indigenous knowledge systems and practices in all learning areas and processes. As Nolasco stated, that it made a difference in the educational system of our country. It was implemented for the learners to be competitive in using their own language in school, to know the structure of their own words and to know the meaning of what they are saying. He added that MTB-MLE develops cognitive skills of the pupils such as reasoning and problem solving skills that can be used in their whole lives.

By this, pupils use and master their first language such as Cebuano, Hiligaynon, Ilocano, Bicolano and other dialects, used in the entire country. Pupils are able to develop critical, reasoning and problem solving skills that they can use for life-long learning. They start to build a strong foundation as they go along speaking their own native tongue, and later adopt other foreign languages which they are going to study later. MTBI serves as a bridge to increase quality education and global competitiveness. It also eliminates inhibition and fears in many pupils especially the younger ones which is sometimes the main reason why many pupils drop out of school.

In addition, Thomas and Collier (1997), and Benson (2006) stated that Mother Tongue-Based Multilingual Education (MTB-MLE) is the most appropriate solution for children who do not use national or international languages in their home life. Good quality MT-based MLE starts education in children’s first language and gradually introduces second or third languages as subjects, transferring if necessary to the second language of instruction after at least six years. Collier (1997) and Benson (2006) emphasized that the best way to solve and upgrade our educational system is to adopt or use our own native language before introducing other languages.

As emphasized by Malone (2010), MTB-MLE plays an important role when most students who enter MLE programs are already comfortable using their mother tongue for daily communication. It is a language education program that helps build a strong educational foundation, then bridge successfully into one or more school languages, and then use both
or all their languages for life-long-learning. Hence, MTB-MLE will work as a strong bridge to enable the students to continue their education with good foundation and able to respect each other’s language and culture.

According to Dyer (2002), the initial response in removing difficulty to basic education was improving access to schooling, which was taken to mean increasing the number of schools and teachers and then by sending many children in school as possible. Mother Tongue is appropriate for use by children in school because it makes them comfortable and they easily understand the lessons well. It is a tool in the improvement of the academic performance of the elementary grade pupils because of their wide understanding of the concepts. According to Tucker ( ) this is especially important in the Philippines where students often enter school with no knowledge of the media of instruction. The most effective form of bilingual education is development of literacy and numeracy (as well as scientific discourse) in the mother tongue as much as possible, followed by transfer to the second language of instruction.

World Bank (2005) estimated that half of the out-of-school children globally do not have access to the language of school in their home lives, indicating the significance of language barriers in education. In this study, the first language (FL) plays an important role in the development of the children in school. Learners can easily understand the lesson if they have more access in their own language. They should master first their own language before transitioning to other foreign languages. Pupils have more understanding with the lesson if the medium of instruction used in school is the language used at homes.

Caker (2006) explained that as we teach language, we are automatically teaching and preserving the culture. Filipinos preserve culture especially the language used at home and even in the entire country. Teachers teach the first language of the children, directly teaching the culture. Teachers should be knowledgeable and competent enough in the different language and culture of the children as well as the people in the community. Teachers should be the good example to the pupils in using the first language by encouragement and modeling. The teachers should inculcate to the hearts and minds of the pupils that the first language is more important than other languages.

According to Cummins (2000), when children continue to develop their abilities in two or more languages throughout their primary school years, they gain a deeper understanding of language, and use it effectively. They have more practice in processing language, especially when they develop literacy in both, and they are able to compare and contrast the ways in which their two languages organize reality. This is true that learning of the pupils should be gradual but continuous. There is no need to force them to absorb the concepts immediately. The gradual introduction of the second or third languages can get better results.

Framework of the Study

This study is anchored on the concept which states that children who are taught using their first language usually achieve better in school and life than children who are forced to learn in an unknown, strange language (Ball, 2010). They gain a better self-concept and have a strong sense of their own identity when they are taught with their familiar language. This is in line with the guidelines of the DepEd (Department of Education) Order No.60, s. 2008 and DepEd Order No. 74, s. 2009 in their implementation of the K-12 Curriculum which caused a significant change in the current educational landscape.

Gonzales (1996), stressed that the parents and the community positively approved the idea of utilizing the children’s mother tongue to be used in school in their preliminary years. He emphasized that this will improve children’s self-concept and identity when learning in the mother tongue; children’s home culture and
traditional knowledge will also be validated and reinforced. Moreover it supports local culture and parental involvement when using a familiar language for instruction, creating a bridge between the formal school system and children’s home and community environment.

Considering that Grade 3 pupils of BSU-ESL are mostly English speakers, the two subject areas, i.e. Science and Mathematics are to be utilized for the study. The two Grade 3 classes will be classified as Experimental and Controlled Group. The controlled group will be taught using the English language which is the common language of the learners. The experimental group will be taught using the Cebuano language, the native dialect of the community. To determine the comparison of the pupils academic performance, a pre-test and post-test will be given to the two classes.

**Objectives**

The main objective of this study was to ascertain the effect of the use of Cebuano language as medium of instruction in the academic achievement of Mathematics and Science subjects in Grade 3. This was conducted in BSU Elementary School Laboratory for school year 2014 -2015. Specifically, the following objectives were set for the study:

1. to find out the academic performance of Grade 3 learners in Mathematics and Science subjects taught with Cebuano and English

2. to find out if there is a significant difference between the academic performance of Grade 3 learners in Mathematics and Science subjects taught with Cebuano and English

3. to determine the implication of the utilization of Mother Tongue in teaching young learners of the pre-service teachers

**Null Hypothesis**

There is no significant difference in the academic performance of Grade 3 pupils in Mathematics and Science subjects when taught using Cebuano and English.

**Methodology**

This study utilized the Pretest-Post-test only experimental research design. The participants were randomly assigned to either the experimental or the control group. Both groups were pretested for the independent variable. The experimental group received the treatment and both groups were post-tested to examine the effects of manipulating the independent variable on the dependent variable. A standardized test was used in gathering the data for both subjects based from the K–12 mathematics and science curriculum. A pre-test and post –test was developed by the science and mathematics teachers. The test was conducted before and after the instructions which covered the lessons in two grading periods. Recitation of the lessons started June 13, 2014 and ended on October 20, 2014. Cebuano language was used as medium of instruction in teaching the science and mathematics to the experimental group while English language was used as the medium of instruction in teaching the two subjects in the controlled group. The study was conducted at Bukidnon State University Elementary Laboratory School (BukSU-ELS). The university has complete facilities such as university library and computer laboratories which cater to students from the six colleges. Its flagship college is the College of Education (COE) to which the ELS belongs. The ELS exists as a laboratory school where the pre-service teachers are deployed for their internship.

ELS has more or less 500 learners of various cultural heritage, religious upbringing, language and culture. The learners are quite conversant in English having grown up with it being prominently used in their homes.
and in social circles. Most of them are well-exposed to technology and multimedia in their homes. The participants of the study were the Grade 3 learners of BukSU-ELS divided in 2 groups namely the experimental and the controlled group. They were grouped heterogeneously since the school used grade point average in assigning these learners to their respective sections. The controlled group were the learners of Grade 3 Little Red Riding Hood whose medium of instruction used was English in both Science and Mathematics subjects. The experimental group, Grade 3 Snow White, utilized Cebuano in teaching the two subjects. The same teacher taught science in both groups and another teacher taught mathematics in both groups.

**Results and Discussion**

This chapter includes the presentation, analysis and interpretation of the data gathered. The presentation of results was organized based on the order of the specific problems. Academic Performance of Grade 3 pupils in Mathematics and Science subjects when taught using Cebuano as medium of instruction and with the use of English language

The mean scores and the standard deviation from the pre-test and post test result of the two groups, experimental and the controlled groups are presented, analyzed, and interpreted.

As shown in Table 1, Mathematics, pre-test and post test score in the experimental group has a very close mean score; however, controlled group mean score has bigger difference. The result of controlled group scores implies that learners have better performance in the Mathematics subject when taught using the English language. This result is true based on the concept of Ball (2010) which states that learners achieve better in school and life if they are not taught with a strange language. This occurred since children in the laboratory school utilize English language. Majority of these learners used English language at home and in school.

The result in the Science subject is quite similar to the result of Mathematics subject; however in terms of their scores difference, the gap is closer. The difference of controlled group is higher compared to the difference of the the experimental group. This result is supported by the idea of Kintanar (1983) which states that these science process skills or thinking skills cannot be sharpened unless one uses his/her mother tongue. If Filipino children will keep on using a foreign language to understand science concepts, then, they can only be at the low level of cognition.

There is no significant difference between the academic performance of Grade 3 learners in Mathematics and Science subjects taught using mother tongue as medium of instruction and with the use of conventional English language.
Table 1. Academic performance of Grade 3 learners in Mathematics and Science

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Subject</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Experimental Group (MTB)</td>
<td>Math</td>
<td>15.21</td>
<td>3.93</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>16.75</td>
<td>5.31</td>
</tr>
<tr>
<td>Controlled Group (English)</td>
<td>Math</td>
<td>20.5</td>
<td>8.45</td>
</tr>
<tr>
<td></td>
<td>Science</td>
<td>17.56</td>
<td>4.62</td>
</tr>
</tbody>
</table>

The implication of the results of the performance of the grade learners provides the pre-service teachers the baseline data on the language that they will utilize in teaching the tool subjects—Mathematics and Science. They must practice flexibility in teaching young learners when it comes to the use of language. The result of this study will prepare them on the language they will utilize when teaching young learners.

Conclusion

The result revealed that learners perform well when the medium of instruction used in teaching science and mathematics is in English. Grade 3 learners who are taught in mathematics and science using the English language have better performance than those pupils who were taught using Cebuano. Since Grade 3 learners are more exposed in English, they preferred to be taught in English in their science and mathematics subjects. Therefore, teaching Science and Mathematics subjects using Cebuano is not encouraged to learners who are more exposed to English language.

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