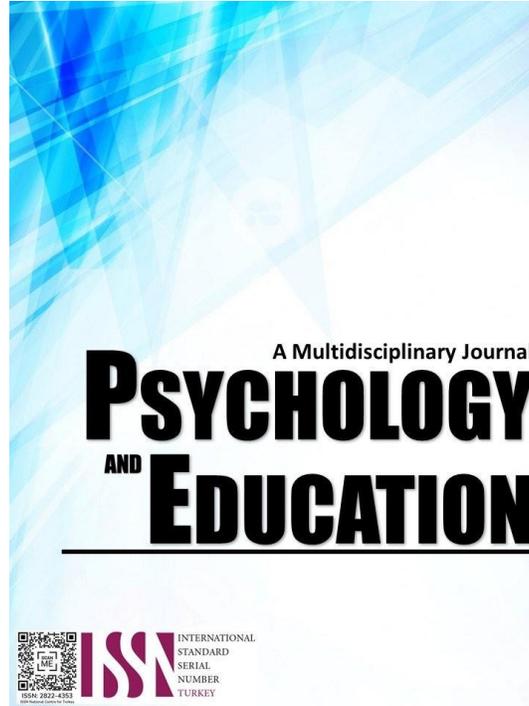# TECHNOLOGY AND MOTHER TONGUE: USE OF DIGITAL MATERIALS IN MOTHER TONGUE BASED-MULTILINGUAL EDUCATION

Technology and Mother Tongue: Use of Digital Materials in Mother Tongue Based-Multilingual Education

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Abstract

This study explores the Technology and Mother Tongue: Use of Digital Materials in Mother Tongue Based-Multilingual Education among grade 1 to grade 3 elementary teachers of East Lebak District, Lebak, Sultan Kudarat. It aimed to determine the socio-demographic profile of the teacher respondents in terms of sex, age, and grade level handled; identify the mother tongue digital materials used in teaching Mother Tongue Based – Multilingual Education; determine the benefits and effectiveness of mother tongue digital materials used in teaching Mother Tongue Based – Multilingual Education; and to determine the relationship between teaching Mother Tongue Based – Multilingual Education and Mother Tongue Digital Materials used. The respondents of this study were 60 teachers from grade 1 to grade 3 of East Lebak District, Lebak, Sultan Kudarat. The data were gathered through an adopted survey questionnaire. The statistical analysis included descriptive statistics such as frequency count, mean, and percentage distribution. Person-r correlation analysis was used to determine the significant relationships between teaching Mother Tongue Based – Multilingual Education and Mother Tongue Digital Materials used On the basis results of this study, it can be concluded that mother-tongue digital materials used in teaching had no significant relationship with the teachings of Mother Tongue-Based – Multilingual Education. Although the result shows that the use of Mother Tongue Digital Materials was beneficial and effective in the teachings of Mother Tongue Based – Multilingual Education. Most of the teacher respondents used PowerPoint in their teaching. The hypothesis of this study was rejected.

Keywords: *mother tongue, mother tongue based – multilingual education, mother tongue digital materials*

Introduction

In the Philippines, the Mother Tongue Based-Multilingual Education (MTB-MLE) policy calls for local mother tongues to be used as the language of instruction from kindergarten to grade three. After grade three, the official languages (Filipino and English) are used as the language of instruction. In the past, the first years of school were taught in Filipino and English, and local languages were used to help teachers and students in the classroom. From the 2012 to 2013 school years, MTB-MLE is being used in all schools across the country. Before, only a small number of schools used MTB-MLE. Now, many schools and teachers are learning how to use a local mother tongue as the language of instruction, and more schools will start doing this in the coming years, teaching more languages.

The MTB-MLE policy has been included in the school system's K-12 curriculum. The usage of digital resources in school has been recognized as a beneficial tool in early education. Everyone agrees that using digital resources in early education, such as movies or videos, is an effective teaching strategy. However, the use of digital tools or resources in the mother tongue language has been largely disregarded in the Philippines for a long time. Research on how technology or digital materials created in the mother tongue languages can support the MTB-MLE system was lacking in the Philippines.

The researcher was therefore needed to investigate this gap in the body of knowledge. The researcher looks to see if digital materials in mother tongues were necessary or helpful for educational teaching in mother tongue- based education.The following sectors were benefiting from the study;

To the Administrators, the result will help them design seminars and pieces of training needed for strengthening the use of mother tongue digital materials in the classroom.

To the Pupils, this study will be a benefit for them to be more interested in learning different subjects using their mother tongue language.

To the Teachers, this study will help them revisit the importance of educational technology and to have a better grasp of technological integration in the classroom.

To the Future Researchers, this study can be used by future researchers that have a common interest with this study. They may acquire some ideas in this study and may improve the study as well.

This study looked at the role of mother-tongue digital materials in the delivery of mother-tongue-based education.

Specifically, the study aimed to determine the socio-demographic profile of the respondents in terms of sex, age, and grade level handled; to identify the digital materials used in teaching Mother-Tongue Based – Multilingual education; to determine the benefits and level of effectiveness of mother tongue digital materials in Mother Tongue Based – Multilingual Education; and to determine the significant relationships between teaching Mother Tongue Based - Mother Tongue Based – Multilingual Education and the use of Mother Tongue Digital Materials.

This study was conducted to determine the importance of the use of digital materials in mother tongue-based-multilingual education.

This was undertaken from the beginning of the semester up to the end of the year 2022 at East Lebak District, Lebak, Sultan Kudarat.

Methodology

Research Design

The quantitative descriptive-correlation research design was used to collect data in this investigation. A descriptive approach in research refers to a study in which information was acquired without any changes to the subject under inquiry.

The descriptive design was used, first, to determine the socio- demographic profile of the respondents, second, to identify the digital materials used in mother-tongue-based education, and lastly, to determine the benefits and effectiveness of mother-tongue digital materials in early education.

A correlation research design was used to determine the significant relationship between teaching Mother Tongue-Based – Multilingual Education and the use of Mother Tongue Digital Materials.

Respondents

The respondents of this study were 19 elementary teachers in grade 1, 20 elementary teachers in grade 2, and 21 elementary teachers in grade 3 of East Lebak District, Lebak, Sultan Kudarat.

To determine the population of this study, the purposive sampling method was applied to elementary teacher respondents. All elementary teachers handling subjects in Grades 1 to 3 level will be taken as respondents of the study.

Instrument

The research questionnaire of this study was adopted but modified on the research of Kumar, T., et al (2021) on Analyzing Multimedia Tools and Language and on the research of Obagah, R. R., & Brisibe, W. G. (2017) on The Effectiveness of Instructional Videos in Enhancing Learning Experience of Architecture Students in Design and Drawing Courses: A Case Study of Rivers State University, Port-Harcourt.

The research instrument was divided into four parts which the respondents will have to answer: the first part, the Socio-Demographic Profile section; the second part, the mother tongue digital materials used; while, the third part, the Effectiveness of Mother Tongue Digital Materials In Mother Tongue Language Education, and fourth part, the Benefits of Mother Tongue Digital Materials In Mother Tongue Language Education.

Procedure

The data collection process in this study comprises submitting a letter to the Dean of the College asking permission to conduct the study. The final draft of the instrument was developed with the adviser's consent. The researcher sends a note to the principal. He physically administered the instrument to the target respondents and conduct a random interview to validate the data collected.

The respondents were guaranteed that their replies were kept strictly confidential and used solely for the study. Following the completion of the questionnaire, each item was assessed independently, or item responses may be totaled to give a score for a collection of questions in some situations. The information gathered was tallied, tabulated, evaluated, and interpreted. The findings were subsequently used to assess the advantages and efficacy of employing mother language digital resources in MTB-MLE instruction.

Data Analysis

The instrument's demographic data were examined using descriptive statistics and displayed in tables. The number of participants by gender and grade level taught was among the indicators. Data analysis was done by a licensed statistician using the Statistical Package for Social Sciences (SPSS). Before analyzing the data, the entire data set was screened for missing data and data entry mistakes.

Pearson-r Correlation Coefficient was used to determine the relationship between teaching Mother Tongue-Based – Multilingual Education and the use of Mother Tongue Digital Materials.

Results and Discussion

This section deals with the study result of the study which consists of the Socio-demographic profile of the respondents in terms of sex, age, and grade level handled, digital materials used in teaching Mother Tongue Based – Multilingual Education, effectiveness and benefits of Mother Tongue Digital Materials in Mother Tongue Based – Multilingual Education, and significant relationship between the teaching of Mother Tongue Based – Multilingual Education and the use of Mother Tongue Digital Materials.

Socio-demographic Profile of the Respondents

The teachers from grade 1 to grade 3 of East Lebak District, Lebak, Sultan Kudarat were the respondents of this study. Their socio-demographic profiles were shown in the following tables below.

Table 1 presents the frequency and percentage distribution of the respondents' profiles in terms of sex. As shown from the table, Fifty-four (90%) were female and 6 (10%) were male. This implies that there are more female teacher respondents than males.

It also shows the frequency and percentage distribution of the respondents' profiles in terms of age. As revealed from the table, the teacher respondents have the highest frequency on age which ranges from 42 – 50 with a frequency of 23 (38.33%), and age which ranges from 51 – 59 had the lowest frequency with a frequency of 7 (11.67%). The data imply that the majority of the teacher respondents were in the middle – age adult stage.

The grade level handled of the teacher respondents was shown in table 1. There are 21 (35%) teacher respondents coming from grade 3, 20 (33.33%) coming from grade 2, and 19 (31.67) teacher respondents coming from grade 1.

Table 1. *Respondents' Profile in terms of Sex*

Variable	Frequency (n=60)	%
Sex		
Male	6	10.00
Female	54	90.00
Age		
25-33	18	30.00
34-41	12	20.00
42-50	23	38.33
51-59	7	11.67
Grade Level Handled		
Grade 1	19	31.67
Grade 2	20	33.33
Grade 3	21	35.00

Digital Materials used in Teaching Mother Tongue Based – Multilingual Education

Table 2 shows the frequency and percentage distribution of the digital materials used in teaching Mothers Tongue Based – Multilingual Education. As shown from the table, PowerPoint Presentation was the most used digital material in teaching Mother Tongue Based – Multilingual Education with a frequency of 58 (96.67%) followed by Television with a frequency of 50 (83.83%), Instructional Videos with a frequency of 45 (75.00%), Social Media with a frequency of 15 (25.00%), and Edtech Solutions with a frequency of 3 (5.00%).

According to Osman, N., Noor, S.S.M., Rouyan, N.M., & Hat, N.C. (2022), PowerPoint was widely used by educators at the school or tertiary levels in the teaching and learning process due to several factors. PowerPoint is the common application that comes with the Microsoft Office package hence making it accessible to most computer users. It is widely used because it is user-friendly with a brief display, a simple and easy-to-understand menu, and various language systems besides the usual Roman system. The PowerPoint content is continuously upgraded in line with the current technology so it can compete with the sophisticated and paid application. All it takes is for the users to be more creative in exploring its functions that go beyond mere slide presentation by including animation, audio or voice recording, and video production.

Table 2. *Digital Materials used in Teaching Mother Tongue Based – Multilingual Education*

Digital Materials	Frequency	Percentage
PowerPoint Presentation	58	96.67
Television	50	83.33
Instructional Videos	45	75.00
Social Media	15	25.00
Edtech Solutions	3	05.00

Effectiveness of Mother Tongue Digital Materials in Mother Tongue- Based – Multilingual Education

Table 3 presents the weighted mean distribution on the level of effectiveness of Mother Tongue Digital Materials in Mother Tongue Based – Multilingual Education. Statements "The use of Mother Tongue Digital Material can support my teaching methods." and "The use of Mother Tongue Digital Materials encourage students to communicate more with their classmates." had the highest weighted mean of 3.58 with the description of "strongly agree" which means that most of the teacher respondents strongly agree in this two statements that the used of Mother Tongue Digital Materials were very effective in teaching Mother Tongue Based – Multilingual Education.

While, the statement "The pupils are more behaved and under control when Mother Tongue Digital Materials used in teaching." had the lowest weighted mean of 3.30 with the description of "agree" which means that the teacher respondents agree with this statement that the use of Mother Tongue Digital Materials were effective in teaching Mother Tongue Based – Multilingual Education. As revealed from the table, the teacher respondents agree that the used Mother Tongue Digital Materials were effective in teaching Mother Tongue Based – Multilingual Education and it was supported by its grand weighted mean of 3.46 with the description of "agree" and

effective as their descriptive equivalent.

According to Kimmons R. (2020), technology Integration in education is the strategic application of technology to achieve learning objectives. Technology integration in education refers to the use of technology to enhance students' learning experience. Using various forms of technology in the classroom, such as a virtual classroom, produces students actively involved in achieving learning objectives. Additionally, the introduction of technology opens avenues for individualized instruction to accommodate the varied requirements of students as individual learners within a larger classroom environment.

Table 3. *Weighted Mean Distribution on the Effectiveness of Mother Tongue Digital Materials in Mother Tongue Based – Multilingual Education*

Statements	Weighted mean	Description	Descriptive equivalent
The use of Mother Tongue Digital Material can support my teaching methods.	3.58	Strongly Agree	Very Effective
The use of Mother Tongue Digital Materials encourages students to communicate more with their classmates.	3.58	Strongly Agree	Very Effective
The use of Mother Tongue Digital Materials enables the pupils to be more active and engaging in the lesson.	3.57	Strongly Agree	Very Effective
I can manage and control pupils learning when using Mother Tongue Digital Materials.	3.52	Strongly Agree	Very Effective
The use of Mother Tongue Digital Materials improves my quality of teaching.	3.45	Agree	Effective
I firmly organized and plan in my class when I use Mother Tongue Digital Materials.	3.43	Agree	Effective
My time is well managed when I use Mother Tongue Digital Materials.	3.40	Agree	Effective
It is easier to teach Mother Tongue- Based – Multilingual Education by using Mother Tongue Digital Materials.	3.38	Agree	Effective
Mother Tongue Digital Materials helps improve pupils' ability in reading and writing.	3.38	Agree	Effective
The pupils are more behaved and under control when Mother Tongue Digital Materials used in teaching.	3.30	Agree	Effective
Total Mean	3.46	Agree	Effective

Legend: 3.50–4.00, Strongly Agree, Very Effective; 2.50–3.49, Agree, Effective; 1.50–2.49, Disagree, Less Effective; 1.00–1.49, Strongly Disagree, Not Effective.

Benefits of Mother Tongue Digital Materials in Mother Tongue-Based – Multilingual Education

Table 4 presents the weighted mean distribution of the Benefits of Mother Tongue Digital Materials in Mother Tongue Based – Multilingual Education.

Table 4. *Weighted Mean Distribution on the Benefits of Mother Tongue Digital Materials in Mother Tongue Based – Multilingual Education*

Statements	Weighted mean	Description	Descriptive equivalent
Increases familiarity with their own ethnic culture through the usage of multimedia tools.	3.55	Strongly Agree	Very Beneficial
Multimedia tools enhance teacher-student engagement.	3.53	Strongly Agree	Very Beneficial
The use of Mother Tongue Digital Materials increases the efficiency of teachers in achieving learning goals.	3.53	Strongly Agree	Very Beneficial
Mother Tongue Digital Materials encourage students to speak more by vividly displaying the contents of textual materials.	3.50	Strongly Agree	Very Beneficial
Mother Tongue Digital Materials make teaching flexible and focused on using technology in and out of classrooms by instructors, educators, and administrators.	3.48	Agree	Beneficial
Multimedia technology drives students to learn in Mother Tongue faster and more efficiently through audio.	3.47	Agree	Beneficial
The employment of Mother Tongue Digital Materials in schools provides an atmosphere conducive to language education.	3.42	Agree	Beneficial
Multimedia technology enhances the communicative abilities of pupils to comprehend the structure, meaning, and function of their language.	3.38	Agree	Beneficial
Presentation of Mother Tongue Digital Materials in the form of multimedia reduces reading time.	3.35	Agree	Beneficial
Total Mean	3.47	Agree	Beneficial

Legend: 3.50–4.00, Strongly Agree, Very Beneficial; 2.50–3.49, Agree, Beneficial; 1.50–2.49, Disagree, Less Beneficial; 1.00–1.49, Strongly Disagree, Not Beneficial.

The statement "Increases familiarity with their own ethnic culture through the usage of multimedia tools." had the highest weighted mean of 3.55 with the description of "strongly agree" which means that most of the teacher respondents strongly agree with this statement that the use of Mother Tongue Digital materials was very beneficial in Mother Tongue Based – Multilingual Education. While statement "Presentation of Mother Tongue Digital Materials in the form of multimedia reduces reading time." had the lowest

weighted mean of 3.35 with the description of "agree" which means that the teacher respondents agree with this statement that the used of Mother Tongue Digital Materials were beneficial in Mother Tongue Based – Multilingual Education. As revealed from the table, the teacher respondents agree that the use of Mother Tongue Digital Materials was beneficial in Mother Tongue Based – Multilingual Education and it was supported by its grand weighted mean of 3.47 with the description of "agree" and "beneficial" as their descriptive equivalent.

Rogulja, N. & Dumani, M. (2019) developed multimedia digital content for learning the mother language using the Cognitive Theory of Multimedia Learning principles. The Cognitive Theory of Multimedia Learning has been highlighted in the development and use of multimedia as a cognitive auxiliary tool for learning reading, writing, history, math, chemistry, meteorology, language, programming, and many others. According to the idea, utilizing visual and verbal information in a multimedia educational message to improve material retention and understanding includes applying one or more CTML principles.

Significant relationships between teaching Mother Tongue Based – Multilingual Education and the use of Mother Tongue Digital Materials

Table 5 shows the computed p – value of 0.092 was greater than the persons – r of 0.56 which means that there were no significant relationships between teaching Mother Tongue Based – Multilingual Education and Mother Tongue Digital Materials used by the teachers since the p – value was greater than 0.05. Thus, the null hypothesis is accepted.

Table 5. *Significant relationships between teaching Mother Tongue Based – Multilingual Education and Mother Tongue Digital Materials Used*

Paired Variables	Person r	p-value	Verbal Description
Mother Tongue Based – Multilingual Education and Mother Tongue Digital Materials Used	0.56	0.092	Not significant

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

The findings of the study were contrary to the concepts of Geoge Siemens (2005), Connectivism: A Learning Theory for the Digital Age, and Dr. Joan Hughes (2006), Assessing Technology Integration: The RAT – Replacement, Amplification, and Transformation – Framework. These two theories pointed out that educational technologies and educational digital materials use in teaching have significance in the learning of the students. But it is shown in the results that there are no significant relationships between teaching Mother Tongue-Based – Multilingual Education and Mother Tongue Digital Materials used by the teachers.

Conclusions

This study entitled "Technology and Mother Tongue: Use of Digital Materials in Mother Tongue Based – Multilingual Education" aimed to determine the socio-demographic profile of the teacher respondents in terms of sex, age, and grade level handled; identify the mother tongue digital materials used in teaching Mother Tongue Based – Multilingual Education; determine the benefits and effectiveness of mother tongue digital materials used in teaching Mother Tongue Based – Multilingual Education; and to determine the relationship between teaching Mother Tongue Based – Multilingual Education and Mother Tongue Digital Materials used. The respondents of this study were 60 grade 1 to grade 3 teachers of East Lebak District, Lebak, Sultan Kudarat. The respondents were purposely selected. Data were analyzed using descriptive statistics such as frequency count, percentage, and weighted mean. Person-r correlation analysis was used to determine the significant relationships between teaching Mother Tongue Based – Multilingual Education and Mother Tongue Digital Materials used

On the basis results of this study, it can be concluded that mother- tongue digital materials used in teaching had no significant relationship with the teachings of Mother Tongue-Based – Multilingual Education. Although the results show that the use of Mother Tongue Digital Materials was beneficial and effective in the teachings of Mother Tongue Based – Multilingual Education. Mostly of the teacher respondents used PowerPoint in their teaching. The hypothesis of this study was rejected. In the light of foregoing findings, the researcher recommends to future researchers make their Mother Tongue Digital Materials and used them as a research instrument then determine if it was beneficial or effective in the teachings of Mother Tongue Based – Multilingual Education. And, a similar study can be conducted where an in-depth analysis can be done.

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