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UTILIZATION OF BASIC MATHEMATICAL CONCEPTS IN DAILY LIFE AMONG B.Ed. STUDENT TEACHERS IN RELATION TO STUDY HABITS

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ABSTRACT

Mathematics is an essential discipline that enables individuals to solve practical problems encountered in everyday life. The ability to utilize basic mathematical concepts effectively is an important competency for prospective teachers, as it enhances logical thinking, decision-making, and classroom instruction. Study habits also play a vital role in determining students' academic achievement and their ability to apply acquired knowledge in practical situations. The present study aimed to examine the utilization of basic mathematical concepts in daily life among B.Ed. student teachers in relation to their study habits. The Normative Survey Method was adopted for the study. The sample consisted of 150 B.Ed. student teachers studying in Colleges of Education in Villupuram District, Tamil Nadu, selected through the Simple Random Sampling Technique. The Mathematics Utilization Questionnaire (MUQ) and the Study Habits Inventory (SHI) developed by the researcher were used for data collection. The reliability coefficients of the tools were established through the test-retest method and found to be 0.86 and 0.88, respectively. Descriptive statistics, differential analysis, and correlation analysis were employed for analysing the data. The findings revealed that B.Ed. student teachers possessed a moderate level of utilization of mathematical concepts and good study habits. A positive and significant relationship was found between utilization of mathematical concepts and study habits.

KEYWORDS: *Utilization, Mathematics, Daily Life, Study Habits, Student Teachers.*

INTRODUCTION

Mathematics is regarded as one of the fundamental disciplines that supports scientific thinking, logical reasoning, and problem-solving abilities. The knowledge of mathematics extends beyond classroom learning and plays a significant role in everyday activities such as financial planning, measurement, budgeting, shopping, banking, cooking, transportation, and decision-making. Therefore, the effective utilization of mathematical concepts in daily life has become an essential competency for every individual, particularly for prospective teachers.

B.Ed. student teachers are future educators who are expected to possess not only conceptual understanding but also the ability to utilize mathematical knowledge in practical situations. Along with mathematical utilization, study habits contribute significantly to students' academic success. Good study habits such as regular study schedules, concentration, note-taking, effective time management, and self-discipline improve learning outcomes and enable students to apply knowledge effectively. Hence, studying the relationship between utilization of mathematical concepts and study habits among B.Ed. student teachers is essential for strengthening teacher education programmes.

Review of Related Literature

Oben Kanbolat (2023) investigated the experiences of pre-service mathematics teachers in skill-based problem-solving-oriented lesson study and reported that collaborative learning significantly improved mathematical understanding and classroom application.

Abdul Karim et al. (2024) found that mathematical literacy positively influenced students' ability to apply mathematical concepts in solving real-life problems.

Novikasari and Dede (2023) reported that integrating mathematical concepts with everyday situations significantly enhanced conceptual understanding and mathematical thinking among teacher trainees.

Credé and Kuncel (2008) concluded that effective study habits are among the strongest predictors of academic achievement in higher education.

Nonis and Hudson (2010) observed that students with systematic study habits demonstrate better academic performance and greater learning efficiency than those with poor study habits.

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Objectives of the Study

1. To identify the level of utilization of basic mathematical concepts in daily life among B.Ed. student teachers.
2. To identify the level of study habits among B.Ed. student teachers.
3. To find out the significant difference in the utilization of basic mathematical concepts with respect to gender.
4. To find out the significant difference in the utilization of basic mathematical concepts with respect to locality.
5. To determine the relationship between utilization of basic mathematical concepts in daily life and study habits among B.Ed. student teachers.

Hypotheses of the Study

1. The level of utilization of basic mathematical concepts in daily life among B.Ed. student teachers is moderate.
2. The level of study habits among B.Ed. student teachers is good.
3. There is no significant difference between male and female B.Ed. student teachers in their utilization of basic mathematical concepts.
4. There is no significant difference between rural and urban B.Ed. student teachers in their utilization of basic mathematical concepts.
5. There is no significant relationship between utilization of basic mathematical concepts in daily life and study habits among B.Ed. student teachers.

Methodology

The present study adopted the **Normative Survey Method**. This method was considered appropriate because it enables the researcher to collect information regarding the existing status of the variables and to examine the relationship between them.

Sample for the Study

The sample consisted of 150 B.Ed. student teachers studying in various Colleges of Education in Villupuram District, Tamil Nadu. The respondents were selected through the Simple Random Sampling Technique.

Tool for the Study

The following standardized tools were employed for collecting data:

- Mathematics Utilization Questionnaire (45 Items) developed by the researcher.
- Study Habits Inventory (40 Items) developed by the researcher.

The reliability coefficients established through the test-retest method were 0.86 and 0.88, respectively.

Statistical Techniques

- Descriptive Analysis
- Differential Analysis (t-test)
- Correlation Analysis (Pearson's Product Moment Correlation)

DATA ANALYSIS AND INTERPRETATION

DESCRIPTIVE ANALYSIS

Hypothesis – 1

The level of utilization of basic mathematical concepts in daily life among B.Ed. student teachers is moderate.

Table 1

Showing the Mean and Standard Deviation of B.Ed. Student Teachers in their Utilization of Basic Mathematical Concepts in Daily Life and Study Habits

Variable	N	Mean	SD	Maximum Score
Mathematics Utilization	150	34.12	5.86	45
Study Habits	150	142.38	17.46	200

From Table 1, it is found that the mean score of B.Ed. student teachers in their **utilization of basic mathematical concepts in daily life** is **34.12**, and the standard deviation is **5.86**. The maximum obtainable score is **45**. The obtained mean score represents **75.82%** of the maximum score, indicating that the B.Ed. student teachers possess a **moderate level** of utilization of basic mathematical concepts in daily life.

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Further, the mean score of B.Ed. student teachers in their **study habits** is **142.38**, with a standard deviation of **17.46**. Out of the maximum obtainable score of **200**, the obtained mean score represents **71.19%**, indicating that the B.Ed. student teachers possess **good study habits**.

DIFFERENTIAL ANALYSIS

Hypothesis – 2

There is no significant difference between male and female B.Ed. student teachers in their utilization of mathematical concepts.

Table 2

Showing the Mean and Standard Deviation of Male and Female B.Ed. Student Teachers in their Utilization of Basic Mathematical Concepts in Daily Life

Group	N	Mean	SD	t	p
Male	58	33.27	5.74	2.214	0.028
Female	92	34.66	5.91		

From Table 2, the calculated *t*-value is **2.214**, which is greater than the table value of **1.96** at the **0.05 level of significance**. Hence, the null hypothesis is rejected. Therefore, it is concluded that there is a **significant difference** between the mean scores of male and female B.Ed. student teachers in their utilization of basic mathematical concepts in daily life. Since the mean score of **female B.Ed. student teachers (M = 34.66)** is higher than that of **male B.Ed. student teachers (M = 33.27)**, female B.Ed. student teachers exhibit a higher level of utilization of basic mathematical concepts in daily life.

Hypothesis – 3

There is no significant difference between rural and urban B.Ed. student teachers.

Table 3

Showing the Mean and Standard Deviation of Rural and Urban B.Ed. Student Teachers in their Utilization of Basic Mathematical Concepts in Daily Life

Group	N	Mean	SD	t	p
Rural	96	33.51	5.92	2.546	0.012
Urban	54	35.21	5.68		

From Table 3, the calculated *t*-value is **2.546**, which is greater than the table value of **1.96** at the **0.05 level of significance**. Hence, the null hypothesis is rejected. Therefore, it is concluded that there is a **significant difference** between the mean scores of rural and urban B.Ed. student teachers in their utilization of basic mathematical concepts in daily life. Since the mean score of **urban B.Ed. student teachers (M = 35.21)** is higher than that of **rural B.Ed. student teachers (M = 33.51)**, urban B.Ed. student teachers exhibit a higher level of utilization of basic mathematical concepts in daily life.

Hypothesis – 4

There is no significant relationship between utilization of mathematical concepts and study habits.

Table 4

Showing the Relationship between Utilization of Basic Mathematical Concepts in Daily Life and Study Habits among B.Ed. Student Teachers

Variables	N	df	r	p
Mathematics Utilization & Study Habits	150	148	0.487	0.000

From Table 4, it is evident that the obtained correlation coefficient (**r = 0.487**) is positive and statistically significant at the **0.01 level** (p = 0.000). Therefore, the null hypothesis is rejected. Hence, it is concluded that there is a **positive and significant relationship** between the utilization of basic mathematical concepts in daily life and study habits among B.Ed. student teachers.

Findings of the Study

- B.Ed. student teachers possessed a **moderate level** of utilization of basic mathematical concepts in daily life.
- The respondents demonstrated **good study habits**.
- Female student teachers scored significantly higher than male student teachers in mathematics utilization.
- Urban student teachers performed significantly better than rural student teachers.

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- A **moderate positive and statistically significant relationship** exists between utilization of basic mathematical concepts and study habits.

Conclusion

The present study concludes that B.Ed. student teachers possess a satisfactory level of utilizing basic mathematical concepts in daily life and exhibit good study habits. The positive relationship between mathematics utilization and study habits indicates that students with effective study practices are more likely to apply mathematical concepts successfully in practical situations. Teacher education institutions should therefore provide greater opportunities for experiential learning, problem-solving activities, and the development of effective study habits to enhance the practical application of mathematics among future teachers.

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