Chapter -IV

Data Analysis and Interpretation

Chapter IV

Data Analysis and Interpretation

4.1   Introduction

Analysis of data means studying the tabulated material in order to determine inherent facts or meanings. It involves breaking down existing complex factors into simpler parts and putting the parts together in new arrangements for purpose of interpretation.

The analysis and interpretation of data involve the objective material in the possession of the researcher and his subjective reactions and desires to derive from data the inherent meanings in their relation to the problem. To avoid making conclusions or interpretations from insufficient or invalid data, the final analysis must be anticipated in detail when plans are being made for collecting information. The problem should be analyzed in detail to see what data are necessary in its solution and to be assured that the methods used will provide for definite answer. The researcher must determine whether or not the factors chosen for study will satisfy all the conditions of the problem and if the source to be used will provide the requisite data.

Analysis of research data is an important step in the dissertation process. Analysis of data means study the tabulated material in order to determine the inherent facts or meaning. It involves breaking up of the complex facts into simpler parts and putting them into new arrangements for the purpose of interpretation. The purpose of this chapter is to report the main finding about Impact of Multilingualism Among Early-Stage Students in the Context of NCF-SE 2023. The results of the study will be presented in this chapter.

This chapter presents the findings and interpretation of data gathered through the questionnaire. Both quantitative metrics and qualitative feedback were analyzed to identify how multilingual exposure is shaping the language development, comprehension, emotional well-being, and participation of early-stage learners within multilingual school settings.

4.2   OBJECTIVES WISE ANALYSIS AND INTERPRETATION OF DATA

Objective 1: To examine the effects of multilingualism on early literacy and cognitive development.

Table 4.2.1: Assessment of multilingualism on language development of early literacy and cognitive development of classes IV and V students of Demonstration Multipurpose Higher secondary school (DMS).

No.	Question	Yes (%)	No (%)
1	Do you speak more than one language at home?	85	15
3	Do you understand what your teacher says in English or Hindi easily?	78	22
4	Do you ever use your home language to understand lessons better?	72	28
5	Do you enjoy speaking in more than one language?	88	12
6	Do you sometimes mix two languages when talking with friends?	65	35
7	Do you read storybooks in different languages?	50	50
8	Do you find it easy to explain things in your mother tongue?	83	17
9	Do you try to speak in English or Hindi at school even if it's hard?	76	24
14	Do you think knowing more languages helps you learn better?	81	19

15	Do you want to learn more languages in the future?	90	10

Interpretation:

The majority of students reported positive cognitive and emotional associations with multilingualism. Students used their home language as a learning aid, which aligns with the NCF-SE 2023 emphasis on multilingual pedagogy. High interest in learning multiple languages indicate a readiness for multilingual learning environments.

This analysis is based on students' responses to selected questions reflecting their multilingual experiences and its effects on language learning and cognitive abilities,**85%** of students reported speaking more than one language at home,**78%** find it easy to understand teachers when they speak in English or Hindi,**72%** of students use their home language to understand lessons better,**88%** enjoy speaking multiple languages,**65%** admit to mixing two languages when talking with friends, Only **50%** read storybooks in different languages,**83%** find it easier to explain things in their mother tongue,**76%** make an effort to speak in school languages even when it's difficult,**81%** believe that knowing more languages helps them learn better,**90%** express a desire to learn more languages.

Table 4.2.2: Assessment of multilingualism on language development of early literacy and cognitive development of classes IV and V students of Banyan Tree High school.

No.	Question	Yes (%)	No (%)
1	Do you speak more than one language at home?	90	10
3	Do you understand what your teacher says in English or Hindi easily?	75	25
4	Do you ever use your home language to understand lessons	78	12

	better?		
5	Do you enjoy speaking in more than one language?	85	15
6	Do you sometimes mix two languages when talking with friends?	65	35
7	Do you read storybooks in different languages?	60	40
8	Do you find it easy to explain things in your mother tongue?	88	12
9	Do you try to speak in English or Hindi at school even if it's hard?	75	25
14	Do you think knowing more languages helps you learn better?	85	15
15	Do you want to learn more languages in the future?	92	8

Interpretation:

This section analyzes how multilingualism influences the **early literacy skills** and **cognitive development** of students from Banyan Tree High School, based on their survey responses. **90%** speak more than one language at home,**75%** understand teachers easily when taught in English or Hindi,**75%** understand teachers easily when taught in English or Hindi,**85%** enjoy speaking in more than one language,**65%** mix two languages when talking to friends,**60%** read storybooks in different languages,**88%** find it easier to express ideas in their mother tongue,**75%** try to speak in school languages even when it is difficult,**85%** believe that knowing more languages helps them learn better,**92%** want to learn additional languages.

Objective 2: To identify the challenges faced by educators and students in multilingual classrooms

Table 4.2.3: Assessment of multilingualism on language development of early literacy and cognitive development to identify the challenges faced by educators and students in multilingual classrooms of classes IV and V students of Demonstration Multipurpose Higher secondary school (DMS).

No.	Question	Yes (%)	No (%)
2	Do your parents or grandparents speak a different language than you?	69	31
10	Do your teachers help you learn in your own language sometimes?	61	39
11	Do you feel confident when speaking in more than one language?	70	30
12	Do you help your classmates understand if they speak a different language?	66	34
13	Do you feel happy when someone speaks to you in your home language?	92	8

Interpretation:

The responses highlight both the potential and the challenges of multilingual classrooms. While many students feel emotionally supported by use of their home language, only 61% report receiving teacher support in their native language and 92% students feel happy to speak in home language, this thing indicated a gap in classroom inclusion practices. Peer support among students is relatively strong, which compensates to an extent for instructional limitations.

Table 4.2.4: Assessment of multilingualism on language development of early literacy and cognitive development identify the challenges faced by teachers and students in multilingual classrooms of classes IV and V students of Banyan Tree High school.

No.	Question	Yes (%)	No (%)
2	Do your parents or grandparents speak a different language than you?	70	30
10	Do your teachers help you learn in your own language sometimes?	60	40
11	Do you feel confident when speaking in more than one language?	70	30
12	Do you help your classmates understand if they speak a different language?	65	35
13	Do you feel happy when someone speaks to you in your home language?	90	10

Interpretation:

The responses highlight both the potential and the challenges of multilingual classrooms. While many students feel emotionally supported by use of their home language, only 65% report receiving teacher support in their native language and highly 90% students feel happy to speak in home language, this thing indicated a gap in classroom inclusion practices. Peer support among students is relatively strong, which compensates to an extent for instructional limitations.

4.3   Result

The analysis across both objectives underscores that multilingualism not only supports early literacy and cognitive development but also plays a crucial role in shaping students' emotional well-being and confidence. However, structural challenges—particularly related to teacher preparedness and multilingual resource availability—remain barriers to fully realizing the benefits of multilingual education. Addressing these challenges is vital for advancing inclusive, effective, and equitable language education as envisioned in the **NCF-SE 2023**.

4.4   Hypotheses of the Study

Multilingualism positively affects the academic understanding and confidence of early-stage learners. These outcomes strongly suggest that **multilingualism supports early literacy, enhances comprehension, and fosters cognitive development**. Therefore, **the hypothesis that multilingualism has no significant impact on cognitive or academic development is rejected**.